ASSESSING THE RISK OF INJURY OF AGGRESSIVE DOGS

Wayne Hunthausen, DVM
Animal Behavior Consultations
4820 Rainbow Blvd.
Westwood, KS  66205
westwoodanimalhospital.com

One of the most crucial steps in working up a dog aggression case is assessing the danger inherent in the situation. A very complete history should be taken from all family members and others involved with the pet. But even when meticulous care is taken to collect information, it may not always be possible to obtain all pertinent details. For example, no adults may have been present to see what triggered the bite of a very young child. Or, the family may know how the pet interacts with adults, but since the pet has never been around children, the danger the pet might pose to them is unknown. The less that is known about the pet’s social behavior around different types of people in various situations, the more questions remain about the amount of danger it poses. In cases where significant danger is obvious or in those where the data is insufficient, exceptionally safe and conservative management will be required.

Variables Correlated with Danger

- Predictability
- Potential to cause damage
- Characteristics of the family
- Overall complexity of the situation

Predictability

The ability to safely manage an aggressive pet depends a great deal on knowing when it will bite. In order to determine predictability, behavior patterns and triggers for aggression must be identified. It must also be determined whether the pet’s behavior in these situations is consistent. If it is known that touching the pet’s head causes it to bite, but not all of the time, danger may increase because people tend to let their guard down when the pet is not consistently aggressive.

The type of stimulus that causes the pet to be aggressive is also important. Most people realize that a strong stimulus, such as kicking a dog, will likely cause aggression. On the other hand, many would not expect to be bitten if they calmly bend down, eye-to-eye to a dog and pat it on the head. So, danger increases when “benign” stimuli trigger aggression.

The absence of warning signals also increases the risk of injury. A person is less likely to avoid being bitten when there are no signs predicting aggressive behavior. Another issue is the latency period between the beginning of the warning and the attack. It doesn’t help the victim if the pet gives a warning, but attacks a millisecond after the warning begins.

In situations where the triggers for uninhibited, injurious bite behavior are completely unknown, it must be assumed that the pet could be aggressive at any time. No contact with people can be permitted, and the pet may need to be muzzled at all times or locked in a safe confinement area.

Potential To Cause Damage

The physical aspects of the dog are certainly important factors in assessing the potential for damage. It’s obvious that large, strong dogs can cause the most damage, but the degree of bite inhibition the animal exhibits is also important. In assessing risk of injury, the amount of bite inhibition the dog displays is typically more important than the frequency with which bites occur. If a large pet has bitten a variety of people in a variety of situations many times and has caused nothing more than light contusions, it is in all probability a safer pet than a smaller one that is unable to inhibit the force of its bite and, even though it has only bitten a few times, has caused serious injuries such as deep tears or broken bones. The number of bites per incident is another important variable. Dogs that bite multiple times during aggressive incidents are likely to be more dangerous than those that bite once and retreat.
The intensity of focus and level of arousal the dog exhibits toward the target during aggressive situations is also important. When these are mild, the owner is more likely to be able to intervene and control the pet. Interrupting a dog that is very aroused and orienting strongly can be exceptionally difficult and an injury will be more likely. The amount of training and dependability of command responses also has an effect on safety.

The target of the aggression is another consideration. Young children and babies are more easily injured with less force than are adults. The type of aggression being displayed can determine the amount of damage done and influence the amount of danger that exists. Predatory-related aggression is the most dangerous type, since killing is part of the behavioral sequence. Territorial aggression is usually more dangerous than fear-related aggression because a dog exhibiting territorial aggression often will pursue the victim. A fear aggressive dog is more likely to avoid interaction and only be aggressive when its personal space in penetrated and there is no opportunity of avoidance.

**The Human Element**

Characteristics of the family can be very important variables influencing the danger of the situation. Some families are in denial about the pet’s behavior and take more risks. The amount of activity and complexity of schedules in some households makes safe control and management of the pet difficult. Large families or those with young children often have difficulty providing safe supervision or confinement of the pet. Doors are left open, locks on gates are forgotten, supervisory duties are not consistent. Families with children may have visiting children in and out without adults knowing. Homes with cognitively impaired adults or young children may have family members that are more likely to put themselves at risk without realizing it and less likely to understand treatment regimens.

The experience of the family with dogs in general is important. The more experience family members have living with dogs, the more they are likely to know about what types of behavior to expect and how to appropriately interact with the pet. They are also more likely to be aware of subtle signs of threatening or aggressive behavior, as well as what constitutes a dangerous situation.

**Overall Complexity Of The Situation**

Finally, the degree of complexity of the entire situation can have an effect on the danger that is present. If there are many types of aggression being displayed by the pet, and if there are a wide variety of stimuli that trigger aggressive behavior, the danger increases. The presence of other concurrent behavior problems also may increase the risk that aggression will occur. For example, if the owner of a pet with a fear-related aggression problem is upset about destructive behavior or housesoiling, the person might be likely to react impulsively in a way that will elicit an aggressive response from the pet. As the number of confrontations with the pet increases, the likelihood of aggression and injuries increases.

**Summary**

Once a behavioral history is obtained for an aggressive dog, the next critical step involves assessing the level of danger and, in particular, whether that danger can be controlled. This has to be done before entering into a discussion of a treatment plan. Variables relating to the risk of injury the pet poses and whether the owners can control the opportunity for interaction with target people or animals will determine if the pet should stay in the home, be rehomed or be euthanized.

A large, strong dog that bites children unpredictably without inhibition in a busy home with many small children, and poor supervision by adults who cannot comprehend the danger of the situation, will obviously pose an extremely high risk for a serious injury. Removing the pet from the home will be a priority in this case. Euthanasia may be a necessary choice, although rehoming may be an option in select cases. In situations where the risk of injury is mild to moderate and can be controlled, the consultant can progress on to a discussion of treatment options.

UNDERSTANDING AND TREATING THE FEARFUL PET

Wayne Hunthausen, DVM
Animal Behavior Consultations
4820 Rainbow Blvd.
Westwood, KS 66205
westwoodanimalhospital.com

Fears and phobias may be due to a pet’s genetics, learned from an unpleasant experience or result from inadequate socialization. Dogs and cats that have not been sufficiently socialized to other species and environments during the critical period of socialization may develop fears that are particularly difficult to correct at a later age. When fear-related behavior is successful and removes the pet from the stimulus (e.g. escape, aggression), the behavior may be reinforced. The prognosis for effective correction varies greatly with the cause. Behaviors due to a strong genetic component or social deprivation can be the most difficult to change. Acquired fear disorders generally have a better prognosis.

Fear-related behaviors can be reinforced by the owner’s response to the behavior. Owners who try to calm their fearful pets when showing avoidance or aggressive behavior with affection, attention or food may actually reward the response. It is essential, therefore, to consider the owner’s response to the fearful pet in order to identify and eliminate any potentiating factors. Punishment can increase the pet’s fear and anxiety and is typically contraindicated.

A number of behavior modification techniques including flooding, habituation, systematic desensitization, counterconditioning and positive reinforcement can be used alone or in combination to correct fearful behaviors. The first step is to identify and control every stimulus that might evoke fear until the program is successfully completed. Unfortunately, this may not always be possible (e.g. thunderstorms, traffic, visitors coming to the home). Should a fear-evoking situation arise during the retraining program, it is critical that the pet is well controlled so that injuries do not occur and the problem is not further aggravated. For example, if the pet is in a crate, on a leash or wearing a muzzle or head halter, injuries and escape behavior can usually be prevented. Often, the best owner response is to have the pet perform an acceptable behavior, such as sit-stay. When the pet calms down and exhibits no fear, it can then be rewarded. In some situations, quickly removing the pet from the situation may be the most prudent decision.

Behavior Modification

The primary strategy is to associate something the pet really likes with the stimulus that triggers a fear response. The positive stimulus should be highly motivating to the pet (e.g. meat treats, favorite toy), and should be withheld except for training sessions. For desensitization and counterconditioning, the pet is initially exposed to levels of stimulus that are below the level that will evoke a fear response. Distance, size, volume and human behavior are the variables that are typically controlled during exposure exercises. Rewards are given only if the pet shows no fear when exposed to the minimized fear-eliciting stimulus. The pet is then gradually exposed to increasing intensities of the stimulus. In time, the pet should perform the desired behavior in the presence of the full strength of the stimulus. If the fear threshold is surpassed at any point in the desensitization program, the owner must back up the training to a previous level and proceed in smaller increments.

For owners with good control and a pet with mild problems, flooding techniques (exposure to stimuli above the threshold that elicits fear) may be faster and equally as effective as desensitization at reducing or eliminating fear. For controlled flooding techniques, the stimulus should be presented at a reduced level, sufficient to cause minimal fear or anxiety. A leash and head-halter control can also be used to ensure compliance. The pet should be exposed to the stimulus until it shows no sign of fear. Once the pet responds shows no fear, rewards should be given and the training session can end. The stimulus can then be gradually increased for each subsequent training session until the pet will accept exposure to the stimulus at full intensity without exhibiting any fear. Flooding may not be the best choice in many cases because it is usually not as practical as using desensitization/counterconditioning and can make the problem worse if not applied correctly.
Since the ultimate goal is to teach the pet to be relaxed in the presence of the fear-eliciting stimulus, techniques that cause pain or discomfort should be avoided. This includes using a pinch collar or using a choke chain to apply a correction. Harsh, uncomfortable corrections are especially problematic for fear-related aggression problems, since they can increase aggressive arousal while at the same time removing warning signals.

Behavior Modification
1. Identify fear-eliciting stimuli
2. Identify thresholds
3. Arrange gradient of stimuli
4. Desensitization and counterconditioning

Fear of People or Animals
Some pets show fear toward a certain type of person/animal (children, babies, men in uniforms, men with beards, small dogs/large dogs, black dogs), or to all humans and/or animals. The fear-related response may include cowering, trembling, freezing, withdrawal, escape or aggression.

Reducing or eliminating fearful behavior requires identification of all stimuli that might cause fear, and avoiding exposure to strong fear-eliciting situations while the pet is being conditioned to be relaxed in the presence of milder ones.

It helpful to have verbal control of the pet. Reinforcing command responses such as sit-stay or down-stay for tasty food rewards can be taught before beginning the conditioning exercises. Once the pet has been effectively trained to respond to obedience commands, the owner can begin to expose the pet to controlled levels of the fearful stimuli beginning below the threshold that elicits a fear response. If the pet shows no fear and responds to the commands, food rewards should be given and the owner can proceed to a slightly stronger level of stimulus with each successive training session. By withholding rewards except for training sessions, the pet should learn to associate positive experiences with the formerly fear-eliciting stimuli. A leash attached to a head-halter system may be helpful for some owners that have difficulty gaining control and getting the pet to respond to commands.

a) Fear of People
Conditioning should begin at a distance from the stimulus where the pet recognizes the stimulus but exhibits no sign of anxiety. As the pet improves, the distance is very gradually reduced. If the pet is fearful of specific types of people, training should begin with a person of slightly different characteristics. For example, pets that are fearful of young children should first be desensitized to the presence of older children. Additionally, the pet can be desensitized to tape recordings of children playing before actual exposure to the children. Pets that are afraid of men with beards, hats or uniforms can first be desensitized to approach and handling from men without beards, hats or uniforms, or to members of the family “dressed up” with beards, hats, or uniforms. Pets that are anxious in the presence of babies might first be desensitized to tape recordings of the baby’s sounds, or to the owner carrying dolls wrapped in baby blankets. During exposure techniques, the pet must be well controlled. For aggressive pets or pets that might attempt to escape, a leash, halter or crate may be useful.

For the pet that becomes fearful when visitors arrive, you may first want to desensitize it to arrival cues. Changing the door bell tone may help reduce fear arousal in some dogs. Begin by desensitizing the pet to sounds at the door by having family members ring the bell or knock at the door. The bell should be rung repeatedly at short intervals until the pet habituates and all undesirable fear-related responses cease. Each time the bell rings or the person knocks and the pet shows no undesirable response, it should be given a very tasty food reward or favorite toy. Next, invite people to visit that are familiar to the pet and around whom it feels the most comfortable. Have the pet on a leash at a safe distance away from the door. When the visitor enters, he should ignore the dog and avoid making eye contact. If the pet shows no signs of fear, it can be asked to sit for a tasty food reward. Once indoors, the visitors should ignore the pet and provide attention only if it approaches in a friendly, non-fearful manner. Treats may be casually tossed near the pet to facilitate approach behavior. The distance between the visitor and the pet should gradually be decreased. Next, proceed to other people that the pet has previously met and finally to strangers. If the pet is most afraid of adult men, then this set of exercises should first involve unfamiliar women followed by exercises with unfamiliar young adult men, and, finally adult men. Ensure that rewards that are
most valuable to the pet are saved for training sessions, so that the pet learns to look forward to the presence of visitors or strangers because their presence predicts that the pet will receive special food treats.

b) Fear of Other Animals

Desensitization to other animals should begin in a neutral environment with a well behaved, well trained and well controlled animal as the stimulus. There should be sufficient distance between the animals to ensure successful desensitization. The starting distance should be an interval at which the pet can recognize the other animal, but not close enough to it that any fearful response is elicited. The fearful pet should receive something it values for exhibiting no fear in the presence of the fear-eliciting stimulus. In time, the distance between the pets is gradually reduced. Head-halters can be very helpful for control.

Noise Phobias (thunder, gunshots, fireworks)

a) Identify all stimuli causing the phobic behavior and attempt to isolate the pet from exposure to these stimuli during training. Keeping the pet indoors, sound-proofing an area of the home or temporarily relocating the pet when problem situations are expected may be helpful.

b) Find a method of controlling or modifying the stimulus for desensitization and counterconditioning. For dogs with gunshot phobias, a starter pistol can be placed in a sound-controlled chamber or muffled with towels. As conditioning progresses, the sound insulation is gradually removed. Increasing the distance from the stimulus to the subject can also be used to provide low levels of exposure. Tape recordings or videotapes of thunderstorms may be useful provided the recordings are also capable of evoking fear. The pet should be exposed to increasing levels of the stimulus. Some modification of the stimulus may also be helpful.

c) To begin desensitization and counterconditioning, select an appropriate location for training, preferably where the pet feels most comfortable and secure. Expose the pet to a low level of the fearful stimulus. For desensitization, the level should be just below the threshold that will evoke fear. While the pet is exposed to the stimulus, it should receive something of value (food, play, social contact). For well trained dogs, requesting command responses for food may help keep the pet more focused on the conditioning and lessen the likelihood of an anxious response. As conditioning progresses, gradually increase the intensity of the stimulus until the pet is exposed to it at full strength. Once the pet learns to be relaxed in the presence of the strongest stimulus, the conditioning should move to a variety of environments and the tonality/presentation of the stimulus can be varied.

Severe thunderstorm phobias present quite a challenge and can be extremely difficult to treat solely using conventional behavior modification. Multiple stimuli are involved in this problem and it is difficult to find artificial stimuli for use in desensitization and counterconditioning to which most pets will respond. It is also difficult to protect the pet from storm exposure between training sessions. For pets that are at a very high risk for severe injuries related to the phobia or who may cause extensive damage in the home, extended pharmacological treatment for days or weeks at a time during storm season may be necessary.

Despite the best of intentions, the pet may inadvertently be exposed to a strong stimulus before conditioning is complete. Should the pet show any fear or anxiety, the owner should ignore the pet. If the pet calms down or can be sufficiently distracted to the point that the fear ceases, a reward maybe given.

Pharmacology

Phenothiazine tranquilizers (acepromazine) may be helpful for mild cases but are sedatives, not anxiolytics. High doses for advanced problems may cause so much sedation that the pet is not be functional. Benzodiazepines are very potent anxiolytics that can be very helpful for severe cases. In most cases, medication should be given one to three hours prior to exposure to the fear-evoking stimuli for optimum effect.

SSRIs, TCAs and buspirone may also be beneficial, but cannot be given “as needed” since they typically take two to four weeks to produce a behavioral response.

BENZODIAZEPINES

Mode of Action:
- Acts on limbic system and reticular formation
-Potentiates GABA, an inhibitory neurotransmitter
-Part of effect may be do to sedation
Uses:
  a. Anxiety disorders
  b. Fears and phobias
  c. Feline urine marking
  c. Anxiety related inappropriate elimination
Comments:
-Long term use may produce habituation
-May be withdrawal signs which can be severe. Always must be carefully tapered off.
-May cause hyperphagia, ataxia, depression, and sometimes a paradoxical increase in activity/agitation (which may subside after a few days)
-May release inhibitions in fear aggression and disinhibit attack behavior.
-May interfere with learning.
-Contraindicated: Impaired liver function

**Alprazolam:**
  DOGS: 0.25-2.0 mg po bid-tid
  CATS: 0.125-0.25 mg/cat po bid

**Clorazepate:** (longer acting, more expensive)
  DOGS: 0.55-2.2 mg/kg PO daily sid-bid
  CATS: 0.55-2.2 mg/kg PO as needed or .5-1.0 mg/kg sid-bid

**Diazepam:**
  DOGS: 0.55 to 2.2 mg/kg PO as needed
  CATS: 1-3 mg/cat sid-bid (**Acute, fatal hepatopathy has been documented in a small number of cats**)

**Lorazepam:**
  CATS: 0.125-0.25 mg/cat bid

**TRICYCLIC ANTIDEPRESSANTS**
Mode of action:
-Block serotonin reuptake at receptor sites; serotonergic
-Other effects
  -Peripheral and central anticholinergic action
  -Variable degree of antihistaminic activity
  -Mildly sedating
Uses:
  a. Antianxiety disorders (separation anxiety)
  b. Phobias (storms, noise)
  c. Compulsive disorders (acral lick, spinning, fly snapping, feather picking, woolsucking in cats)
  d. Housesoiling (marking, anxiety-related)
  e. Aggression
Caution:
-Side effects: (anticholinergic) dry mouth, inappetence, constipation, disorientation, depression, ataxia urine retention,
-May reduce seizure threshold
-May interfere with thyroid replacement medications
-Must have normal hepatic and renal function
-May alter liver enzymes
-Cardiotoxic: Possible arrhythmias in cats and dogs. May cause tachycardia, syncope.

**Amitriptyline:** (moderate sedation, potent anticholinergic )
  DOGS: 2.2-4.4 mg/kg PO sid-bid OR DOGS: 1-2 mg/kg PO q12 hr PO
  CATS: 5.0-10.0 mg/cat/q24 hrs OR CATS: 0.5-1.0 mg/kg PO q12-24 hr

**Clomipramine:**
  DOGS: 2-4 mg/kg PO per day SID or split BID
  CATS: 0.5 mg/kg PO q 24 hr
SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)
Mode of action:
- Block serotonin reuptake at presynaptic receptor sites
- Potent serotonergic agents
- may take two weeks to see behavior effects
Uses:  
  a. Anxiety disorders, phobias
  b. Compulsive disorders
  c. Aggression
  d. Urine marking, anxiety-related housesoiling
Comments:
- May cause anorexia, nausea, sedation, constipation, paradoxical agitations

**FLUOXETINE:**
- **DOGS:** 1 mg/kg PO q 24 hr
- **CATS:** 0.5 mg/kg PO q 24 hr

**PAROXETINE:**
- **DOGS:** 1 mg/kg PO q 24 hr
- **CATS:** 1 mg/kg PO q 24 hr
- 2.5-5.0 mg/cat q 24-48 hours for urine spraying

**SERTRALINE:**
- **DOGS:** 1-3 mg/kg q 24 hrs

AZAPIRONES
**Buspirone:** (non-sedative anxiolytic)
Mode of action:
- Serotonin agonist
- Nonspecific anxiolytic agent
- May take two weeks to see behavior effects
Uses:  
  a. Anxiety disorders, mild phobias
  b. Urine marking
  c. Aggression

- **DOGS:** 1.0 – 2.0 mg/kg PO q sid-tid
- **CATS:** 5.0-7.5 mg/cat bid
Comments:
- Wide margin of safety, little sedation, minimal effect on cognition, no withdrawal problems

MAO INHIBITORS
Mode of action:
- MAOB inhibitor
- Blocks oxidative deamination of brain amines
- Increases dopamine, norepinephrine, epinephrine
Uses:
  a. Canine cognitive dysfunction and associated behavior problems (sleep disorders, housesoiling, barking, disorientation, confusion, decreased social interaction)
  b. Separation anxiety
**Selegiline (Anipryl®)**
- **DOGS:** 0.5 mg/kg q 24 hrs
- **CATS:** 0.5 mg/kg q 24 hrs

BETA BLOCKERS
Mode of action:
- B1- B2-adrenergic receptor blocker
- Decreases somatic components of anxiety
Uses:
- Mild anxieties, noise phobias
- Separation anxiety

**Propranolol:**

DOGS: 0.5-2 mg/kg PO bid-tid
CATS: 0.2-1.0 mg/kg PO bid-tid

**Pheromones**

**Dog Appeasing Pheromone (D.A.P.)**

Pheromones are chemicals emitted by an individual that have a biological effect on the recipient. D.A.P. is a synthetic copy of a dog’s naturally occurring appeasing pheromones from the intermammary groove of the lactating female which appears in the first three days post whelping. It mimics the properties of the natural pheromones of the lactating female. By replicating a signal of comfort, D.A.P. helps alleviate fear and stress related signs in puppies and adult dogs. D.A.P. is available as a plug-in diffuser, spray and collar. D.A.P has virtually no odor and has no side effects.

**Indications:**
- Separation anxiety
- Settling a pup/dog into a new environment
- Travel anxiety
- Global anxiety disorders
- Social and environmental deprivation problems
- Fear of people
- Noise phobias

**Feliway** (US distributor - Veterinary Products Laboratories vpl.com)

Available as an environmental spray and a diffuser. Contains synthetic analogues of naturally occurring facial pheromones. Feliway replicates pheromones cats use for marking when they rub their cheeks against objects.

**Indications:**
- Urine spraying
- Anxiety-related housesoiling
- Scratching
- Hospitalized cats
  - Anxiety
  - Aggression
  - Anorexia
- Settling into a new environment
- Travel
- Interfeline aggression

**REFERENCES**

5. Dr. Jacqui Neilson – Personal communication
Overview

Housesoiling is the most common behavior problem for which cat owners seek help.\textsuperscript{1,2,3,4} The typical cat’s convenient, welcome habit of disposing of urine and stool in a litterbox help make it a popular indoor pet. On the other hand, the indiscriminate elimination habits of some cats have contributed to their demise. It’s very frustrating for owners who have to cope with the disagreeable problem of housesoiling by an otherwise loving, wonderful pet.

A good medical work up is important to investigate underlying physiological problems. Medical problems that cause discomfort during elimination, as well as those that result in an increase in the volume or frequency of elimination can trigger housesoiling.

Once underlying medical problems have been ruled out, the first step in working up a housesoiling problem is to find out whether the cat is spraying a vertical surface or eliminating inappropriately on horizontal surfaces. Spraying occurs when a cat backs up to an upright surface and directs a stream of urine toward it. The amount is typically smaller than what is voided when a cat empties its bladder during normal urination.\textsuperscript{1,5} This is a marking behavior that is typically caused by territorial or stressful situations.

The density of cats in the home contributes to the incidence of spraying. Spraying increases from 25\% in single-cat households to 100\% in households with more than ten cats.\textsuperscript{1} Intact males or females in heat are the individuals most likely to engage in this type of behavior,\textsuperscript{6} although some neutered cats will spray. In fact, studies have shown that as many as 10\% of prepubertally castrated male cats and 5\% of prepubertally spayed female cats take up spraying on a frequent basis as adults.\textsuperscript{7} Objects that are commonly sprayed include doors, walls by doors or windows, new objects in the house and furniture.

When taking the history, close attention must be given to anything that might make the pet anxious or elicit a territorial response. The tendency to spray is influenced by factors pertaining to the individual (hormones, temperament), environmental stimuli that are upsetting to the cat (new roommate, new cat in the neighborhood, remodeling, moving) and its relationship with the owners (change in the work schedule, absences from home, spending less time with the pet, inappropriate punishment).

Sometimes, just the suggestion that another pet has invaded its territory can cause the pet to spray. For example, if a visitor has cats at home, a cat may spray the visitor’s coat when it smells the odor of non-resident cats. One cat that was presented to me for housesoiling had started spraying around the living room fireplace when firelogs were brought inside the house that had been sprayed by neighborhood cats.

Inappropriate elimination can be defined as the act of squatting to defecate or urinate on horizontal surfaces outside the litterbox that are unacceptable to the owner.\textsuperscript{6} Housesoiling that occurs as a squatting behavior occurs with an almost equal incidence in females and males.\textsuperscript{3} Horizontal surfaces may be soiled in a variety of areas, or the pet may develop a specific location preference.

There are many causes of inappropriate elimination. If the cat suddenly starts urinating and defecating outside the box, then it’s highly likely that something about the litterbox is aversive to the cat. The physical accumulation of waste, organic odor, disinfectant odor, unacceptable litter or a negative experience associated with the litterbox may cause the pet to avoid it. The box may be in an area the cat does not like. There may be too much traffic through the area, or the area may be associated with something aversive that happened to the cat. Perhaps it was medicated, disciplined or frightened in the vicinity of the box. If the pet has been severely punished for any reason, it may start eliminating in secluded areas in order to avoid family members. Some cats will eliminate outside the litterbox simply because they have found another area or surface that is preferable.

If the cat consistently defecates in the box, but urinates elsewhere, or vice versa, then the problem probably isn’t caused by an undesirable litterbox, substrate or box location. Likely causes are medical problems, new surface preferences or new location preferences. Other causes of inappropriate elimination include a need for privacy and medical problems (cystitis, constipation, diarrhea, diabetes, renal disease, arthritis, senility\textsuperscript{6}). Be suspicious of constipation or colitis if an older pet suddenly stops defecating in the litterbox, but continues to use it for urination.

In some cats, the act of eliminating on horizontal surfaces can be a marking behavior caused by the same stimuli that cause spraying. This will result in a puddle if the cat squats or a linear wet area if the cat sprays in the
middle of a room or bed, but not near an upright object. As mentioned earlier, the most common cause is increased
cat density. Emotional problems, such as a stressful relationship with a family member, separation anxiety or fear
can trigger housesoiling.\textsuperscript{1,3} If the cat is urinating on top of specific items, such as the owner’s clothing, bed or
favorite chair, you will want to be sure to explore an anxiety-related problem. This type of problem is often difficult
to diagnose, especially if the behavior is only manifested intermittently. If emotional factors are maintaining the
housesoiling, you may expect to see related changes occurring, such as hiding, avoidance, aggression or an
alteration in the pet’s general temperament or behavior.\textsuperscript{1} Keeping a diary may help the owner identify the stimuli
that trigger intermittent marking episodes.

**History**

Diagnosing the early causes of a long standing housesoiling problem can be very difficult. A good history
and extensive detective work are essential in pinpointing the motivation for the unacceptable behavior. Even with
the best efforts, the initial reasons for not using the litterbox may not become evident. Be sure the cat presented for
the problem is actually the one that is housesoiling. In a multi-cat household, separation may be necessary to find
the culprit. Another method is to give fluorescein orally (0.5 ml of a 10% solution) or by injection (0.3 ml of a 10%
solution SQ) in order to trace urine stains to the individual with the problem.\textsuperscript{6,9,10} Urine soiled spots retain
fluorescence for at least 24 hours.\textsuperscript{6}

You’ll need to know the signalment and medical history of the patient. Relevant lab tests and a physical
exam should be performed. You’ll also want to find out when and where the problem began; if there were any
changes in the cat’s environment that were associated with the beginning of the problem; whether the soiling
involves urine, stool or both; what surfaces are being soiled; how frequently the problem occurs; if the appearance
of the problem has changed; and what has been done to try to correct the problem.

The objective is to elucidate the factors that motivate the undesirable elimination behaviors. If you do not do
a housecall consultation, ask the owner to diagram the house with litterbox placement and soiled areas noted. If the
cat is urinating in the house in response to visits by neighborhood cats, you may discover clusters of soiled areas
around windows or doors in the house near the areas where outdoor cats visit.

You need to keep in mind that the factors that contributed to the initiation of the housesoiling may be
different than the factors that are maintaining the behavior.\textsuperscript{1,5} For example, a sudden change to a brand of litter
that was unacceptable to the pet may have caused it to avoid the box and eliminate on the living room carpet. After
a certain amount of time, the cat may develop new surface or location preferences. It will continue to eliminate in
the living room even though the owner switches back to an acceptable brand of litter. In this case, the initiating
factor was a litter brand change, the maintaining factors are new elimination preferences. It is important to know
the maintaining factors in order to curtail the problem. Uncovering the initiating factors will help the owner prevent
the problem from recurring.

**Prognosis**

The chances of success depend on a number of factors: the duration of the problem; the number of areas
soiled; the number of different surfaces soiled; the ability to control the arousing stimuli; the temperament of the
pet; whether the pet was ever trained to use a litterbox; and the patience, ability and willingness of the family to
commit to working with the pet.

**Treatment of Urine Marking**

- Remove the stimuli
- Surgery
- Pheromones
- Medication
- Behavior modification

The two main approaches to eliminating urine marking involve altering the cat’s exposure to the stimulus
and altering the cat’s normal response to the stimulus.\textsuperscript{11} If outdoor cats are the stimulus for spraying, then the
owner should consider discouraging their visits with a water hose or booby traps, or have the cats humanely
removed from the property. Anything in the yard that might attract roaming cats should be removed (bird feeders,
garbage, food, etc.). Besides removing the stimuli, the owner can remove access to the stimuli. The spraying cat
should be kept away from windows or out of rooms that permit it to view outdoor cats. Drapes can be closed.
Window sills can be modified so that the cat can no longer sit on them. Chairs near windows on which the cat
perches can be moved. Urine odor should be cleaned from around doors and windows. If other cats in the
household are contributing to the problem, they should be separated. In some cases, the number of cats in the home
may need to be reduced. Some individuals will spray less indoors if they have more access to the outdoors. Others do better if kept inside more.

Neutering is very successful in curbing spraying behavior at any age and, in most cases, should be done as soon as possible. Efficacy has been reported at 90% for males and 95% for females. Although rarely used, olfactory tractotomy and ischiocavernosus myectomy have been successfully used to control urine marking.

A recent approach to the treatment of urine spraying involves the use of the environmental application of facial pheromones. Work done by Dr. Patrick Pageat in France has appraised the use of feline facial pheromones to curb spraying behavior. He demonstrated a significant reduction in the incidence of spraying by cats when their own facial pheromones were collected on gauze pads and applied to areas in their environment that were being sprayed. His work was the basis for the development of a spray containing synthetic analogues of naturally occurring feline facial pheromones (Feliway®, Farnam). Studies have demonstrated the pheromone spray is up to 95% successful in stopping reactionary-type urine spraying in cats (triggered by changes in the cat’s surroundings such as moving, new occupants of the home, stress, remodeling, etc.). The product also shows promise in helping cats settle into new surroundings. Information provided by the company details a study of 56 cats in which the pheromone product was successful in significantly decreasing the time interval between introduction into a new environment and the exhibition of feeding and exploratory behavior. A heat activated diffuser is now available in the United States which appears to be as effective as the spray and is much easier to use.

Medication is often necessary to control urine spraying. Since individual responses to psychoactive drugs may vary considerably, owners should give the initial dose when they can be at home to observe the cat’s behavior. The dosage may be adjusted up or down by 25% increments until the behavior is controlled without causing undue sedation. If the pet responds to treatment, then a decrease in marking behavior usually occurs within two to four weeks. Two to six weeks after starting the medication, an attempt should be made to slowly decrease the dosage. Owners should be informed of all potential side effects and that none of these drugs are approved for behavior modification in cats. Progestins, benzodiazepines, tricyclic antidepressants, azapirones and selective serotonin reuptake inhibitors have all been used with varying degrees of success. The drug that I use most frequently is fluoxetine (Prozac™ - 2.5 to 5.0 mg per cat q 24 hours). It is available in a small size tablet and is tolerated in food by most cats. Paroxetine (Paxil™ - 2.5 to 5.0 mg per cat q 24 hours) is another SSRI that is frequently successful. Another drug I have used successfully is clomipramine (2.5-5.0 mg per cat q 24 hours). In a recent Belgium study, 80% of the cats(n=26) given clomipramine demonstrated at least a 75% reduction in spraying behavior. Buspirone (Buspar™ - 2.5 to 7.5 mg per cat q 12 hours) is another good choice for spraying with a reported efficacy of 55%. Buspirone is effective within the same range as diazepam and greater than that for the progestins. Buspirone does not cause the adverse effects of sedation and ataxia, commonly seen with most benzodiazepines. Because of its wide margin of safety, buspirone is a good drug to consider for geriatric or pets with realized or potential health problems. Diazepam (Valium™) is an effective drug in a significant number of cats at a dosage of 1 to 2 mg/cat PO q 12 hours. Studies have shown that after cessation of diazepam, however, 90% of cats resumed spraying while only 50% resumed spraying when buspirone was discontinued. A small number of cats will become hyperactive when given diazepam, but the hyperactivity will usually decrease within three days. Another, more serious, side effect that has recently been reported is acute, fatal hepatopathy. This problem has been documented in a very small number of cats. Pretreatment lab work was not done on most of the reported cases and the pathophysiology of this problem is not well understood. Amitriptyline (Elavil™ - 5 to 10 mg per cat PO q 24 hr) or alprazolam (Xanax™ - 0.125-0.25 mg per cat PO q 12 hr) have also been reported to be effective for treating urine marking. Progestins are not as effective as the above mentioned medications for decreasing spraying behavior and have more side effects. They may be considered for cats that do not respond to other treatments.

Treatment of Inappropriate Elimination

Treatment of inappropriate elimination problems involves three major considerations: remove the cause, reestablish the habit of litterbox use and prevent the cat from returning to previously soiled areas.

Remove the Cause

If the housesoiling is due to litterbox or location aversion, the box may need to be moved, medical problems must be treated, an acceptable brand of litter must be found and the box may need to be cleaned more often. Aversive handling in the box must be stopped. Changing the depth of the litter or removing a plastic litterbox liner may help in some cases. Switching to a sand/potting soil mix or one of the fine-textured clumping litters may also be helpful. The results of a study of feline litter material preferences suggest that important factors contributing to establishing preferences for litter material are texture, granularity, and coarseness. The cats in the study showed a
definite preference for a finely textured clay litter. Any new substrate should be introduced in an additional box in case it happens to be one the pet dislikes. As a rule of thumb, you should recommend at least one box per cat be available. The boxes should be scooped once or twice daily and emptied at least once each week. Scalding hot water may need to be used instead of harsh smelling disinfectants if the cat is very sensitive to cleaning solution odors. If disinfectants are used, the box should be dried in the sun and out of operation for at least twenty-four hours.

If the cat prefers hard surfaces, try using an empty litterbox or a food tray. Gradually add litter to the container. Some cats appear to need privacy. For these cats, the owner should place an open-ended cardboard box over the litterbox or purchase a covered box. Another solution is to put a cat door in the door to a closet or storeroom. This will also protect the pet from being bothered by children or the pet dog.

**Reestablish Litter Box Use**

To reestablish a consistent habit of using the litterbox, the cat should be confined to a small area with the box and only allowed out when it can be supervised 100% of the time. When confined to a relatively small area, most cats seem to prefer to eliminate in the box rather than soiling the floor. It’s then a matter of confining the cat long enough for a consistent habit to become established. As a rule of thumb, one week of confinement is usually recommended for every month of soiling. The ratio may be decreased for soiling problems in existence for more than six months. Total confinement time should generally not exceed eight weeks. Food rewards may help when given immediately after the cat finishes eliminating in the box. If the cat becomes anxious about being confined, anxiolytic medication or Feliway® should be considered.

If the cat refuses to use the litterbox when confined to a small room, the confinement area should be changed to a large cage. If it still won’t use the box, a perch or shelf should be added inside the cage. The floor should be covered with litter, forcing the pet to use it for elimination. The litter should gradually be removed and replaced with a litterbox. Once the cat has used the litterbox in a confined area for an appropriate amount of time, the owner can begin to gradually allow it to have more freedom in the home.

**Prevent Further Soiling**

Previously soiled areas can be safeguarded by placing booby traps, food bowls, bedding or toys in the areas. Lemon-scented room deodorant, perfume or cologne will deter some cats. Plastic carpet runners can be placed upside down with the “feet” facing up. Plastic, foil or double-stick carpet tape can be used to protect specific areas. You may need to experiment. Each cat is an individual in regard to surface preference for elimination. While some cats will avoid eliminating on plastic covered surfaces, others will be drawn to these areas to eliminate. An inch of water can be left in the bottom of a bathtub or sink to curb elimination there. Access to the soiled areas can be denied by moving furniture or closing doors. In some areas, such as the corners of the basement, it may be prudent to place a litterbox where the cat has been soiling.

Removing urine and stool odor is important. Products that are specifically formulated to work on these types of odor should be used, such as K.O.E.® diluted one ounce per quart of water. These products need to make contact with the organic material. In most cases, an ample amount should be poured on carpeting and porous surfaces to allow penetration into deeper layers rather than just spraying the surface. A 50:50 mixture of white vinegar and warm water will do a satisfactory job if nothing else is available.

Some cats are extremely sensitive to changes in their environment. They housesoil in response to minor changes. Owners need to realize this and do their best to keep things constant, although this is not always possible. When situations occur that are likely to upset the cat, the owner should confine, supervise and use anxiolytic medications. Desensitization and counterconditioning may help reduce undesirable responses to anxiety producing stimuli.

**Punishment**

Punishment is the least effective tool for controlling housesoiling. Under no circumstances should the owner swat or physically punish the pet. If the owner catches the pet in the act of eliminating in an inappropriate area, the owner can make a sharp noise, the cat can be squirted with a water gun, or an object can be tossed near the cat to interrupt the behavior. This should be done without saying anything or looking at the cat. Any type of interruption must only be given during the behavior or within one second after the behavior ceases. It is very important that the cat not associate the interruptive stimulus with the owner or the bond between the pet and the owner will quickly deteriorate. A proper interruption should stop the behavior and slightly startle the cat without causing it to become
fearful or avoid the owner. Care must be taken when using anything that might be aversive to the cat if anxiety or fear is an significant component of the problem.

**Summary**

The steps in correcting a feline housesoiling problem include:

a) Identify the soiling cat
b) Remove the stimuli for housesoiling
c) Modify the pet’s response to the stimuli
d) Reestablish the habit of litterbox use with confinement, supervision and rewards
e) Prevent resoiling by using booby traps, remote punishment or changing the function of the areas

**References**

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KOETM, Thornell Corp. 160 Wheelock Rd, Penfield, NY 14526, 716-586-5147
Canine and feline behavior problems can be a real challenge to correct, but with a little forethought and the right information, owners can easily prevent most common problems. Many owners begin their relationship with the new pet armed with misinformation and an idealistic view of the pet-owner relationship. Individuals in the pet health care profession have many opportunities to help owners get off to a good start. You can’t take for granted that the owners know how to properly shape behaviors or handle problems, you need to ask what they know so you can help them promote good behavior and a good relationship with the new family member.

**Educating the New Owner**

Be sure to take advantage of the young pet’s initial vaccination visits to educate the new owner about behavior concerns. By attaching a checklist to each new pet's record, you can insure that no important topic is missed, even if a different doctor sees the pet for each visit. The counseling does not necessarily need to be done by the veterinarian. Another qualified staff member can meet with the owners and the pet before or after they visit with the doctor. A full explanation of elimination training, socialization and prevention of destructive behaviors should be given, booklets and other handouts should be provided as well as a reading list for those who want to learn more about shaping the pet's behavior to its full potential. As the pet owner returns for successive visits, questions should be asked about the pet's progress and whether there are any problems that need attention.

**Socialization**

Dogs and cats both have a critical period in their lives when they learn to interact with members of the same and other species. In dogs, that period is between four to twelve weeks of age. In cats, it is between approximately two to seven weeks of age. After these periods, their ability to develop confidence in interacting with other living beings gradually decreases. During the early months of life, puppies and kittens need to have as many positive experiences as possible with members of the same species and other species with whom they will live. Puppies and kittens need to be around humans of all ages and appearances in order to reduce the likelihood of shyness and fear aggression. Be sure to counsel owners without children to provide adequate, supervised interaction with children at a young age. It is not uncommon for young couples to have problems when they start their family because the pet has never been socialized to children.

**Rules for Training Young Pets:**

I. Don't take good behaviors for granted

The best way for the pet to learn to do what the owner wants it to do is by rewarding it when it has done something acceptable. The owner should actively look for desired behaviors so that the pet can be praised.

II. Set the pet up to succeed

Most kittens and puppies engage in quite predictable behaviors. They are active, inquisitive and get into everything. Puppies will eliminate anywhere and chew on everything until trained. Young kittens tend to spend a good part of the time scratching things and scampering around, knocking objects off of shelves and counters. It is up to the new pet owner to prevent mistakes by moving things out of reach and providing proper training. Close supervision or appropriate confinement may constantly be necessary for some pets until they reach two years of age. The young pet has a short attention span and is easily distracted. Owner's set it up to fail if they train too long or ask it to do something in the presence of a strong distraction. Owner education concerning what behaviors to expect from young, growing pets and how they should be handled is of utmost importance.

III. Be consistent

The whole family needs to sit down and agree upon which behaviors are acceptable and which are not. It is very important that all members handle specific behaviors in the same way. If the family or an individual is inconsistent, the pet will be confused, learning will be delayed and anxiety may result in serious behavior problems.

IV. Avoid Punishment

Owners must understand that if they strike the pet, the consequences can be disastrous. Handshyness, fear-biting, avoidance of humans, aggression and submissive urination may all result from physical punishment. One of the most important things that the pet must learn is that the human hand is a friend. A loud, abrupt, semi-startling reprimand is usually adequate to interrupt an undesirable behavior by a young pet. To be effective, the correction
must be given during the behavior, every time the behavior occurs, should be intense enough to stop the behavior without causing significant anxiety and should stop when the behavior stops. If necessary, the owner can use a shake can, air horn, whistle or other device if the pet ignores verbal corrections. The owner should not rely on punishment alone to shape the pet’s behavior. Alternate, desirable behavior should always be reinforced.

For behaviors that occur when the owner is not present, environmental devices can be used to keep a pet away from areas where undesirable behaviors might occur.

- **Upside down mouse traps**
- **ScatMat ®**
- **Scraminal ® - motion activate alarm**
- **Snappy trainers ®**
- **Spray Barrier ®**

**Punishment**
- No physical punishment
- Timing
- Intensity
- Consistency
- Must stop when the behavior stops
- Avoid association with the person

*Always reinforce alternate, desirable behaviors*

**Housetraining**

Housetraining can be very smooth if the owner follows these simple rules:

I. **Teach the puppy where to go**
   - The speed at which the pup learns where it is supposed to eliminate depends on how consistently the owner accompanies it to the proper elimination area and praises it.

II. **Control access to food and water**
   - Feed the puppy twice daily (three times for small breeds) at the same time every day. Only leave the food down for twenty minutes. Do not feed for three to four hours prior to bedtime. Take the water up one to two hours prior to bedtime.

III. **Adequate supervision and confinement**
   - Until the puppy has not soiled in the house for four consecutive weeks, it must either be under constant supervision by a family member who is actually watching it at all times or must be confined to a crate or a small room. A leash can be an important tool for preventing the pup from sneaking away. Inadequate supervision and confinement are the most common reasons for failure to housetrain the puppy.

IV. **Teach the pup to signal when it has to eliminate**
   - This can be done by frequently keeping the pup on a leash indoors, especially during times when it is likely to have to eliminate. Puppies quickly learn to sneak away from the owner to eliminate so they can avoid a scolding. When the puppy is prevented from sneaking away, it will become anxious and vocalize or fidget. Since the owner is nearby, these behaviors will be noticed and the pet will be taken outdoors. It doesn't take too many repetitions of this scenario for the pup to learn that being close to an owner and vocalizing or fidgeting results in a trip outdoors.

V. **Odor control**
   - Use a good commercial product made specifically for pet elimination odors. I have found K.O.E.™ (Thornell Corporation) to be an inexpensive, very effective product. (For very strong odors, it can be mixed to a concentration of one ounce of the product in one quart of water)

VI. **Punishment**
   - Punishment should be avoided. The only correction permitted is a loud "No" used to interrupt the pet when it is caught in the act of eliminating in an inappropriate area. Submissive or greeting urination should never be punished.

**Leadership Exercises**

- **Purpose of these exercises:**
  - Gain more control of the pet
SURVIVAL STRATEGIES

- Increase the pet’s dependability in responding to commands
- Provide structure and consistency in the interaction between the pet and family members
- Reduce impulsive behavior

You will want to keep these rules in place until you have good control of the pet and it dependably listens and responds to commands. In most cases, this will be at least four to six weeks before going back to your usual interaction with the pet. Consistency is very important. The whole family must participate and follow the recommendations in the same way.

I. Nothing in life is free
   a. Ask the pet to respond to a command, such as “Sit,” prior to getting anything it wants or needs. (Before putting food down, giving treats/toys, beginning play, petting, allowing on furniture, picking up, etc.)

II. Don’t tell me what to do
   a. Do not allow the pet to successfully solicit attention from you.
   b. Any nudge, whine, bark, push, nudge, lean, etc. for attention must be ignored. Pull your hands in, lean away from the pet and look away from it. Get up and walk away if the pet is exceptionally pushy and difficult to ignore.
   c. Do not scold, say anything or push the pet away from you.
   d. Once the pet stops soliciting for ten seconds, you can ask it to sit or sit/stay and give it some attention.
   e. Another strategy is to take control by asking the pet to sit as it walks up to you, but before it attempts to be pushy for attention.

III. Don’t move without permission
   a. Anytime you begin to move from one area of the home to another, ask the pet to sit/stay and wait for a release command to follow you.
   b. Also request a “Sit/stay” prior to going up and down stairs, as well as in and out of the home.
   c. You only need for the pet to stay for one to two seconds, and you do not need to walk away form the pet during the stay to do this properly.
   d. It is not as necessary to be as rigid about this rule as the previous two. It is understandable that it may be difficult or impractical to have the pet sit/stay every time you move.

Destructive Chewing - Dogs

Controlling the destructive chewing propensities of a young puppy is of utmost importance for pet owners. Most owners tend to rely solely on punishment to correct unacceptable chewing behavior, so they need to be taught that it is more effective and more humane to correct the problem by reinforcing desirable behavior. This can be done by providing the puppy with a safe environment in which it has sufficient outlets to explore, and safe, interesting toys to chew. Since an excess of unused energy can further contribute to the desire to explore, chew, and destroy, plenty of play and exercise is a must for all puppies.

Selecting appropriate chew toys

When selecting chew toys, the owner should begin with a variety of toys and determine which types the pup prefers. If the owners rotate through different toys every few days, they can help keep them novel and interesting. Be sure that the owners reward the dog every time they see it chewing its toys by giving it affection, play or a tiny bit of puppy kibble. Toys made of sheet rawhide, nylon, and durable rubber are most practical. Toys that have cavities or depressions can be packed with food to capture the pet’s attention (Kong Toy®, Bite-A-Bone®). Applying a light coat of meat juice or cheese spread to toys will also help make them interesting and extend the length of time that they keep the pet occupied.

Preventing and deterring inappropriate chewing

Even with an excellent selection of appealing chew toys, there are numerous household items that may still be more inviting than the chew toys themselves. Until the owners can trust the pet (this may not be until the pet is 18 to 24 months of age), it must be under constant supervision or confined to a safe area (e.g. dog crate or exercise pen). They must be counseled to never give items to the puppy to chew that are similar to household items.
Providing objects such as old clothing can lead to problems since the puppy may have difficulty distinguishing between old clothing and new clothing. As the puppy grows older and is allowed more freedom around the home, the owners may need to take extra care to prevent mistakes. They can teach the pet to avoid their possessions by making them taste bad. Commercial anti-chew sprays, oil of citronella or a small amount of cayenne pepper, mixed with water and applied to the objects, may be successful deterrents. Booby traps (e.g. motion-detector alarms) can also be used to keep the pet away from areas or items that need to be protected when the owners are unavailable to supervise. Since owners often resort to inappropriate punishment techniques, they may need to be persuaded not to use methods that include harsh or delayed corrections.

**Chewing on Plants**

Plant leaves can be misted with water and sprinkled with cayenne pepper to discourage chewing. Motion-activated alarms can be hung in large plants or Christmas trees to teach the pet to avoid them.

**Destructive Scratching – Cats**

Teaching the cat to use a scratching post

1. Find a post with a surface that the cat likes that is stable and tall enough for the pet. Besides commercial carpet-covered posts, try a fireplace log secured to a plywood base or a rope-covered post. Every time the pet approaches the post, toss a very small treat to it. When it touches the post, toss a bigger treat, and when it scratches give it a big treat.

2. Keep the pet within eyesight at all times when you are at home. Whenever it starts to scratch furniture, interrupt the behavior with a water gun, or toss a bean bag NEAR it. Don’t say anything or look at the pet when you do this.

3. Whenever you can’t watch the cat (out of the home, busy or sleeping), confine it to a room without objects that it will likely scratch except its scratching post. Once you notice that it is frequently scratching the post on its own, gradually start allowing it some freedom without supervision.

4. To keep from scratching furniture when you are not around, try one or more of these:
   a. Hang a movement detector alarm on the corner of the furniture
   b. Hang a towel over the side of the furniture with six empty aluminum cans on top of the towel. When the cat scratches, the cans will tumble down.
   c. Attach balloons to the side of the furniture. Hang a short ribbon on each balloon so the cat will swat at the ribbon and pop the balloon.
   d. Cover the furniture with plastic or canvas drop cloths.
   e. Attach a tissue with a strong citrus fragrance to the side of the furniture.
   f. Apply Sticky Paws ™ to furniture (double stick tape)

Soft Paws ® can also be nails and used during the training period to cover the cat’s nails and protect furniture.

Another common, destructive kitten behavior is chewing on plants. This can be corrected by misting the plants with water and sprinkling cayenne pepper on the damp leaves.

**Pulling on Lead**

Head halters: Excellent tools for controlling this problem behavior (Gentle Leader, Halti, Snoot Loop)

No-Pull Halters: Most of these devices apply pressure to the axillary to inhibit pulling on lead. They provide less overall control than the head halters, but may be better tolerated and by some dogs than a head halter.

**Barking**

1. **Training the “Quiet” command**

Training a dog to be quiet on command requires that the dog first be barking. Training will therefore be most successful if you can anticipate a situation when the dog will bark (e.g. children playing, knocking at the door, etc.) so that you can be prepared to quiet the dog on command.

As soon as you hear even the smallest first woof, say “Quiet,” call the dog to you, ask it to “Sit” and praise a quiet response.

If the puppy doesn’t listen and barks after you ask it to be quiet, immediately shake a shake can or sound an air horn as you repeat the “Quiet” command. If the volume is correct for the temperament of the pet, it should immediately stop barking and show a slight startle response without acting afraid.
Another alternative is to leave a head halter and leash attached to the dog. If the dog does not immediately become quiet on command, then a quick pull on the leash and head halter can guide the dog into a quiet sitting position. This is followed by a release of tension on the lead to indicate the correct response has been achieved.

2. Encouraging quiet behavior
Watch the dog for a calm, quiet response and provide attention, affection, play or food to encourage this behavior.

Barking must not be reinforced with any form of attention, affection, food or play. Any attention that does not stop the barking, may actually serve to reinforce the behavior. If barking cannot be stopped, it should be ignored until the dog is quiet, and then reinforcement can be given.

Yelling, physical punishment, or the owner’s agitated or anxious behavior may further aggravate the dog’s barking and anxiety.

Use of a bark-activated device (audible alarm, citronella spray bark activated collar) may inhibit barking in some dogs. Once the barking stops, the owner should then immediately distract the dog with affection or a favored treat or toy so that the quiet behavior can be reinforced and barking is less likely to recur.

Avoid leaving the puppy outdoors unsupervised for long periods. It may be stimulated to bark by passing stimuli (other dogs, strangers) or may bark to attract your attention. Opening the door or going out to the dog, even to settle the dog down, will only serve to reinforce the barking behavior.

3. Anxiety-induced barking
When barking arises out of anxiety, the treatment program will need to be designed to address the underlying cause of anxiety as well as any factors that might be reinforcing or aggravating the problem.

For owner absent barking problems, the Gentle Spray Collar™ (citronella spray) is an effective, humane product.

Socialization
Even though dogs have been domesticated for thousands of years, each new puppy that comes into our world must learn about humans. Socialization is the process during which puppies develop positive relationships with other living beings. The most sensitive period for successful socialization is during the first three to four months of life. The experiences the pet has during this time will have a major influence on its developing personality and how well it gets along with people and other animals when it grows into adulthood. It is very important for puppies to have frequent, positive social experiences during these early months in order to prevent asocial behavior, fear and biting. Puppies that are inadequately socialized may develop irreversible fears, leading to timidity or aggression. This is not to say that socialization is complete by four months of age, only that it should begin before that time. Continued exposure to a variety of people and other animals, as the pet grows and develops is an essential part of maintaining good social skills. It is also extremely important that your new puppy be exposed to new environments and stimuli at this time (e.g. sounds, odors, locations) to reduce the fear of “the unfamiliar” that might otherwise develop as the pet grows older.

Puppy Socialization
Attending puppy classes during this primary socialization period is an excellent way to ensure multiple contacts with a variety of people and other dogs. This relatively new concept in training involves enrolling puppies early, before they pick up “bad habits,” and at an age when they learn very quickly. Puppy training and socialization classes are now available in many communities where, in some cases, puppies can be admitted as early as their third month. These classes can help puppies get off to a great start with training, and offer an excellent opportunity for important social experiences with other puppies and with a wide variety of people.

It is important for every puppy to meet as many new people as possible in a wide variety of situations. It can be beneficial to ask each person who meets the puppy to give the puppy a biscuit. This will teach the puppy to look forward to meeting people and discourage hand-shyness since the puppy will learn to associate new friends and an outstretched hand with something positive. Once the puppy has learned to sit on command, the family should have each new friend ask it to sit before giving the biscuit. This teaches a proper greeting and will make the puppy less likely to jump up on people. The family should make certain that the pet has the opportunity to meet and receive biscuits from a wide variety of people of all ages, appearances and both sexes during the early formative months. Every effort must be made to see that the young pup has plenty of opportunities to learn about children. Kids can seem like a completely different species to dogs since they walk, act, and talk much differently than adults. Puppies that grow up without meeting children when they are young may never feel comfortable around them when they become adults.

And last, but not least, the family should avoid physical punishment and any interactions with people that might make the puppy anxious. Harshly punishing a young pet will damage its bond with the person and weaken its
trust in people. Techniques such as swatting the pup, shaking it by the scruff, roughly forcing it onto its back, thumping it on the nose and rubbing its face in a mess should never be used. Pets that are raised using these methods may grow up to fear the human hand, and are likely candidates to become fear biters. In general, any interactions with people that might make a puppy anxious should particularly be avoided during the early months of its life.

**Food Bowl Guarding**
In most cases, this can be prevented by spending time with the puppy during its dinner to teach it that it is not at risk for losing its food.

- Discourage competition
- Unrestricted allotments and access to food for pups in the litter
- Equal access to toys and treats
- Feed enough so the pup is not hungry
- Early handling of the pet and food
  - Walk by and drop small pieces of meat or canned food into the bowl while it is eating
  - Feed on the floor with the bowl in your lap
  - Slip small pieces of meat or canned food into the bowl as the pup eats its kibble
  - Hold the bowl when it is eating and occasionally pull it away just long enough to slip meat or canned food into it, then give it back
- Avoid harsh training methods
- Socialization
- Early obedience training
- Leadership

**Food Lure Obedience Training**
There are many advantages to teaching the puppy to come and sit on command during one of its early visits to the veterinary hospital. Using food-lure-reward methods, this can be done in about five minutes. Stand two feet away from the puppy, show it a piece of food held between your thumb and forefinger and wiggle your fingers. As the pup approaches, say its name and call it. When the pup reaches the food, slowly and deliberately move it over the top of its head. As the pup moves its head back to follow the food, he will move into a sitting position. As he does this, say "Sit." Be careful not to hold the food too high over the head as this may encourage the pet to jump up for it.

Why spend exam room time to teach obedience commands? Well, when the pet learns to obey commands at a very early age, it will help the owner establish leadership, gain control of the pup and serve as a tool for socializing. Teaching the "Come-sit" decreases jumping-up behaviors because the pup learns to approach and greet by sitting. It also decreases handshyness by associating an outstretched hand with a food reward. That's a big return for a five minute investment!

Most of a pet's learning occurs by simply having stimuli it likes or dislikes associated with the behavior. Behaviors of the pet that are associated with something it likes have a high likelihood of being repeated and behaviors that are associated with something aversive are likely to disappear. Timing is very important. Punishment that occurs too late (more than a few seconds after the behavior) will be ineffective and may lead to other problems. For example, a destructive dog that is harshly disciplined for its misdeeds when it greets the owners each day may start submissively urinating near the front door in anticipation of the daily beating. On the other hand, when a reward is given at an inappropriate time, undesirable behaviors may be reinforced. The owner who gives an energetic greeting to a pup that is excited and bouncing off the walls is reinforcing unruly greeting behaviors.

**Puppy Classes**
One of the most beneficial and appreciated services that you can offer to owners of young puppies is a puppy training class. Working with puppies in a class situation has special advantages. You get a better idea of how the pup interacts with the family in situations outside the exam room. It allows you to closely follow the pup’s progress and help the owner as problems arise. The classes are also very good for socializing the pups to humans as well as other puppies. The other benefits of puppy classes are that they teach the puppy to look forward to visiting the hospital, they generate revenue and they make good press for a public relations program.
Counseling New Kitten Owners

Don’t take for granted that owners know about litterbox care and housesoiling problems. They need to learn to avoid indiscriminately changing between types of litter, that the box needs to be in an area with some privacy and that the box should be cleaned frequently. It is wise to recommend close supervision or confinement for the first two to four weeks after the young kitten is adopted.

A large amount of kitten play involves aggressive behavior. If the kitten doesn’t have peers with which to play, aggressive play directed toward family members may become intolerable. Owners should not encourage kittens to play-attack hands or fingers. Interesting toys should be provided, and interactive play should involve tossing toys or moving toys on strings or sticks for the kitten to chase. Ping pong balls and walnuts will provide inexpensive entertainment for most kittens. Physical punishment and rough handling often tend to increase the play-attack behaviors. An effective punisher for most kittens is a blast from a compressed air canister (photography store).

The owner may need instruction on how to introduce the new kitten to the resident cat. An initial week of isolation for the new kitten is smart from a behavioral and medical point of view. During the following week, the resident cat and the kitten should alternately be confined and allowed free run of the house at different times. Additional feeding and elimination stations should be provided in areas where a cat will not be trapped while using them. The first introduction should be at opposite ends of the largest room in the house. If nothing more than a little hissing and posturing occurs, their relationship will probably develop without more help from the owner. As a precaution, the owner should supervise when home and continue to separate for about two more weeks. If chasing or fighting occurs, the pets should be separated and reintroduced at a later date, perhaps seven to ten days later.

Summary

Whatever you do in the way of counseling new pet owners, remember that early information about behavior can make a big difference in the relationship between the pet and the owner. Behavior problems are much easier to prevent than to correct and owners need reliable help to weed through conflicting and inappropriate training information. Everybody wins when we take the time and effort to provide timely behavior counseling. The owner are more likely to have a well behaved pet, we are more likely to have a manageable patient and the pet is more likely to remain an important part of the family.

Resources


Dunbar I. Sirius Puppy Training. Very helpful if you plan to start your own puppy classes. Includes control of play-biting, bite inhibition, handling exercises, establishing leadership and socialization. It also contains some tips on housetraining, chewing problems and obedience training for puppies. James and Kenneth Publishers. 2140 Shattuck Ave #2406, Berkeley, CA 94704 (510) 658-8588


Gentle Leader™ / Promise™: (head collar), Premier Pet Products, 527 Branchway Rd., Richmond, VA, 23236, 800-933-5595, Canada: Professional Animal Behaviour Associates Inc., P.O. Box 25111, London, Ontario, N6C 6A8, 519-685-4756, Video an training booklet available.

Scidmore K and McConnell PB, Puppy Primer, published by Dog's Best Friend, Ltd., P.O. Box 447, Black Earth, WI 53515, 608-767-2435, 1996

Behavior Pamphlets: American Animal Hospital Association, 12575 W. Bayaud Ave., Lakewood, CO 80228, 1-800-252-2242
INTRODUCTION

Separation anxiety is a distressing behavior problem with serious consequences for the owner as well as the pet. Dogs with this disorder exhibit exaggerated signs of anxiety when they do not have access to family members. It usually happens when the owner is away from home, but may occur when the owner is home but the dog can’t get the owner’s attention or the pet’s access to the owner is blocked. Approximately fourteen per cent of pet dogs seen in veterinary hospitals in the United States are suspected to suffer from separation anxiety (Allpoints Research 1997). There are no notable differences between sexes or breeds of dogs in regard to risk of development of separation anxiety, but studies have indicated that there are significantly more mixed-breds, dogs adopted from humane societies and dogs over ten years of age that present for this problem (Voith and Borchelt 1985, McCrave et al 1986, Chapman and Voith 1990).

Highly social species, such as dogs, exhibit attachment behaviors which serve to maintain social contact and bonds between adult individuals as well as between parent and offspring (McCrave 1991). In situations where an individual loses contact with the group, the resultant anxiety can trigger behaviors that will attract other members (vocalizations), behaviors that help remove barriers (digging, chewing) or ones that facilitate the restoration of contact (increased activity) with other members. It is this underlying drive to be with members of the established social group that provides the foundation for hyper-attachment problems to develop.

The underlying issue involves hyper-attachment to one or more family members. The onset of problems often coincides with changes in the amount of time that the owner spends with the pet. A new social relationship, working late, or returning to work after an extended stay at home are all examples of changes in the owner’s life that can be upsetting for the pet. Environmental stress such as a move to a new home or a traumatic event might also contribute to a separation anxiety problem. In some older pets, the problem may gradually develop on its own without any major environmental changes. Although the exact etiology of these types of changes in senior and geriatric dogs is unknown, changes in the physiology of the aging canine brain may serve to facilitate the development of separation anxiety.

Some owners are convinced that the destructive behaviors are purposefully directed toward them because the pet is “mad” about being left alone or confined. Part of this reasoning is due to the fact that the objects that are commonly damaged include personal items belonging to the owner, such as books, clothing, shoes and sofa cushions. What these objects have in common is that they are frequently handled by the owner and carry the owner’s scent. Contact with these items may serve to remind the pet of the absent owner, which causes anxiety that triggers destructive displacement behaviors.

Treatment for separation anxiety involves developing independence for the dog by adjusting the relationship with the owner and promoting calmness when the owner is gone. This is done by managing the environment, teaching the owner alternate ways of interacting with the pet, using behavior modification, and, for severe cases, prescribing medication.

Diagnosing separation anxiety

The diagnosis involves collecting historical information about the pet that reveals hyper-attachment to the owner, anxiety at the time of the owner’s departure and owner-absent behavior problems for which other medical and behavioral causes have been ruled out.
The medical workup
An important initial step is the medical work up. Each pet should receive a thorough physical exam. Depending upon the specific behaviors the individual is exhibiting and the physical exam findings, a full neurologic exam, chemistry panel, CBC, thyroid evaluation, fecal exam and/or urinalysis may need to be performed.

Hyper-attachment
The typical home situation in which separation anxiety problem develops is one in which the relationship between the pet and the owner is extremely close. When the owner is home, the pet may continuously keep the owner within eyesight or may constantly stay at the owner’s side. A prime candidate for this type of problem is the dog with a slightly anxious temperament that successfully solicits attention from the owner whenever it wants, and is very sensitive to environmental changes.

Predeparture anxiety
As the owner prepares to leave, the pet usually shows salient signs of anxiety including increased activity (restlessness, pacing, whining), depression (withdraws, reluctant to move, “downcast” look, refuses to take treats) or physiologic changes (panting, tachycardia, hypersalivation, vomiting). These occur in response to recognizable departure cues, such as picking up car keys, putting on a coat, picking up a brief case, etc.

Owner-absent problems
During the owner’s absence, the dog may exhibit a wide range of behaviors including chewing, scratching, housesoiling and vocalizing. The targets of the destructive behavior are usually areas around windows or doorways where the owner leaves the home, or items that bear the owner’s odor. The problems may occur every time the owner leaves or only after specific absences. For example, the pet may be fine when the owner leaves for work each day, but becomes distressed and destructive during absences of the owner in the evening.

Greeting behaviors
When the owner returns, the dog usually exhibits exaggerated greeting behaviors.

RULING OUT OTHER BEHAVIOR PROBLEMS
Destructive Behavior
There are a variety of reasons why a dog might exhibit destructive behaviors. If the destructive behavior is usually directed toward doors and nearby windows where the owner exits, it is likely that the pet is suffering from separation anxiety. Other targets for destructive behavior include personal possessions of the owners or things they contact, such as hair brushes, books, clothes, and furniture. The dog will target those items because they carry the owner’s scent, not because the dog is “getting back at that person” for being left alone, as some owners might suspect. Much of the destructive behavior begins within the first thirty to sixty minutes following the owner’s departure. This a time when the pet’s anxiety and arousal level is the highest.

Other causes of destructive behaviors in the owner’s absence include teething, play, investigative behavior, hunger, nesting (during pseudocyesis), noise phobias, barrier frustration, and inadequate exercise or stimulation. Some pets will scratch and dig at walls and flooring when they hear mice scurrying about.

Another explanation for intermittent destructive chewing around windows and doors is territorial behavior. Displaced chewing or destructive escape behaviors can be triggered when the pet sees another dog or a person outdoors.

Housesoiling
Pets with separation anxiety will usually eliminate in the home every time the owner leaves. They will do this shortly after the owner leaves, even if they have just eliminated outdoors prior to the owner’s departure. Some may even eliminate while the owner is in the act of departing. Unless the pet is also house-soiling due to a concurrent training problem, elimination in the home is unusual when the owner is present. An exception to this may occur when the owner is physically present, but mentally absent. This may happen when the owner is ignoring the pet and paying attention to a new baby or social partner.

Other causes of house-soiling when the owner is gone include training problems, schedule changes, diet changes, excessive confinement periods, gastrointestinal disease, lower urinary tract disorders, incontinence, medical problems that cause polyuria or diarrhea, medications that increase the volume or frequency of elimination, urine marking, and cognitive dysfunction.

The most common cause of house-soiling is inadequate training. In most cases, these pets also house-soil when the owner is at home. Problems involving diet changes, disease processes or medication should be discovered during the medical workup. Information about where the pet eliminates, as well as the pet’s temperament, sexual status and reactivity may provide clues regarding marking problems.

Vocalizations

Vocalizations associated with separation anxiety may include crying, whining, yipes, howls and barking. These usually begin as the owner is leaving home. Excessive anxious vocalizing may also occur if the owner is home and the pet’s access to the owner is blocked.

Other causes of excessive vocalization that should be ruled out include physical discomfort, alarm barking, predatory response to prey animals seen through the window, compulsive disorder, territorial aggression, social response to hearing other dogs, cognitive dysfunction, and other anxiety-related disorders.

Miscellaneous Problems

In addition to excessive destructive behaviors, vocalizations and inappropriate elimination, dogs with separation anxiety may also show signs of hypersalivation, emesis, diarrhea, self-mutilation, withdrawal, anorexia, depression, and lethargy. Many of these signs can be caused by a variety of diseases. Therefore, a complete medical workup is extremely important.

PROGNOSIS

The outlook is good if the duration of the time since the problem began is short, the pet doesn’t exhibit significant signs of anxiety in a variety of other situations, the owners can be motivated to perform time-consuming exercises as well as change the way in which they interact with the pet, and, in severe cases, the owners are willing to use psychoactive medication.

TREATMENT

The successful management of separation anxiety includes teaching the dog to tolerate owner absences and correcting the specific problems of chewing, scratching, digging, barking, or elimination.

Environmental Considerations

Adding another pet

In rare situations, providing another pet will provide a playmate or distraction for the dog. It doesn’t necessarily have to be another canine. Turtles, ferrets or cats might provide companionship or stimulation. But this will not always help since most dogs miss their owners in particular, and adding another pet is no substitute for the human companionship for which they yearn.

Confinement

Confining the pet to a crate or small room in the home will immediately stop destructive behavior and house-soiling throughout the home, but is usually not well tolerated by pets with little experience with confinement. Sudden confinement may actually add to the anxiety that the pet experiences during the owner’s absence. Some pets become so determined to escape the confinement area that they cause major damage and even serious injuries to themselves. Ideally, the pet should be gradually introduced to the confinement area by using treats and toys. Placing the crate near a patio window so the pet can see outdoors may help in some cases. In other cases, exercise pens or home-built indoor runs may be better tolerated. There may not be enough time for the frustrated owner to...
do confinement training properly. When this is the case, day boarding, hiring a pet sitter or using anxiolytic medication may initially be necessary.

**Distractions**
It may be helpful to provide certain types of chew toys and activities to keep the pet occupied during the high anxiety period immediately following the owner’s departure. The best toys are those that are highly stimulating and keep the pet’s attention. Although many dogs will not chew their regular toys or eat when anxious or stressed, new chew toys, or food-type chew toys (e.g. pig’s ears, rawhide dipped in bouillon, cow femurs stuffed with shrimp) may be attractive. Tasty food treats, such as meat or cheese should be hidden inside toys, in packages that the dog must open, or hidden under bowls or boxes around the home in order to keep the pet busy. Reserving the dog’s access to special treats to times when the owner is absent may actually teach the dog to look forward to the owner leaving.

Leaving a radio or television on may help mask environmental noises that might make the pet anxious and trigger barking or destructive behaviors.

**Destructive behavior**
Environmental measures have varying degrees of success depending upon the individual dog’s temperament. Applying aversive-tasting substances may help curb chewing. Removing or blocking access to chewed items may be protective. A low volume motion alarm may help keep the pet away from an area. A basket muzzle (for safety, the pet must be able to open its mouth) may help immediately control destructive chewing, but should only be used if the pet can be taught to wear it without increasing its anxiety.

**Housesoiling**
Clean up elimination odors and place food bowls and toys over previously soiled areas to discourage resoiling. Confine the pet to a relatively small area. Avoid feeding large meals prior to confinement. Providing a bowl of frozen water will prevent the pet from drinking large amounts at one time, and force it to sip throughout the day. For some cases, providing a doggie door may be helpful.

**Vocalization**
Shock collars or any strongly aversive techniques should be avoided. Playing a radio at a volume that masks environmental noises or confining the pet to an area of the home where it cannot hear outside noises may be helpful. A citronella anti-bark spray collar may be beneficial and appropriate for some pets. It should be used for the first time when the owner is at home to insure that it does not contribute to the pet’s anxiety.

**Behavior Modification**

**Change the relationship with the owner**
The owner should avoid giving the pet attention on demand. When the pet gets what it wants every time it nudges or whines, it is more likely to be anxious when it is alone and can’t get social attention. The owners should know that they can give the pet the attention they desire, but it must always be on their terms, not the pet’s. Strategies that involve having the owner completely ignore the pet at all times may be counterproductive and are not humane.

**Departures and predeparture cues**
Most dogs with separation anxiety have learned to associate specific cues with the owner’s departure. The presence of these departures cues will typically create anxiety about an impending absence of the owner. Until the pet has been habituated to these cues, they should be avoided whenever possible during actual departures. Putting jacket and boots on in a room away from the pet, leaving a briefcase, purse or keys in the garage and leaving through a different door while the dog is otherwise occupied or distracted can greatly help reduce departure anxiety. Departures should be kept as calm as possible.

To reduce the pet’s anxiety at the owner’s departure, the dog should be habituated to departure cues. This can be done by repeatedly picking up the car keys, opening the door, putting on a coat or picking up a briefcase, etc, so that these cues lose their strength in eliciting anxiety.

**Greetings**
Homecomings should be kept very low key and the pet should be ignored until it is calm. When the greeting with the owner is the high point of the pet’s day and the owner is late in arriving, the pet is likely to become distressed and engage in unacceptable separation behaviors.
Obedience

The pet must learn to respond to “sit”, “down”, and “stay” commands so the owner can begin teaching it to tolerate being alone.

Teach the pet to be alone - Phase I

The owner should introduce the pet to the idea that it cannot always be with family members by frequently requesting it to do down-stays and sit-stays. This phase should begin with the pet responding to a stay command for a very short period (one - two seconds) before accompanying the owner to various rooms throughout the home. Gradually, the pet should be required to stay for longer periods of time until it will remain in another room for 30 minutes or more. If the dog is confined to a particular room or area during normal departures, this is the area where a majority of the training should take place.

Teach the pet to be alone - Phase II

After the pet has been habituated to the departure cues, the owner should practice short mock departures. Prior to leaving, the pet should be ignored for 15 minutes. The owner should quietly leave for a very short period of only a few seconds to a few minutes. The duration should be shorter than the time in which it takes the pet to show signs of anxiety. Periods can be lengthened gradually when the dog repeatedly responds without anxiety. The duration of the departures should be lengthened on a variable schedule, so that the pet cannot predict exactly how long the owner will be absent.

Exercise

Frequent exercise sessions have a calming effect, decrease anxiety and provide suitable social interaction. Providing vigorous, aerobic exercise two to three times daily can have a very positive effect in many cases.

Punishment

Punishment by the owner increases anxiety and it plays no appropriate role in the successful management of separation anxiety. Unfortunately, it is the most commonly employed tool by the owner in an attempt to correct separation-related behavior problems. This approach is fraught with problems. First, since the behavior problem occurs when the owner is absent, punishment cannot be temporally associated with the behaviors and, therefore, the animal cannot learn from it. Second, punishment by the owner often causes conflict and more anxiety. Consider the dog that becomes very anxious and chews on the door because of the owner’s absence. All this poor creature thinks about during the owner’s absence is resuming contact. When this finally occurs, what happens? The owner scolds and possibly beats the dog. The causes even more stress, and the anxiety-related problems increase. At the worst, other problems can develop such as compulsive disorders, avoidance and fear aggression.

Medication

Pharmacologic intervention can be a very important treatment adjunct for dogs with severe problems. For situations when a frustrated owner can no longer tolerate the pet’s behavior, it may be life saving. Pretreatment physical exams and lab evaluations are important since most psychoactive medications require normal hepatic and renal function to assure proper metabolism.

Indications For Medication

- Extremely distressed pet
- High risk for injury
- Major household damage
- Frustrated owner

TRICYCLIC ANTIDEPRESSANTS

Tricyclic antidepressants such as clomipramine and amitriptyline can be very helpful for treating pets with separation anxiety by providing relief from anxiety as behavior modification begins.

Mode of action:

- Enhances serotonin activity by blocking serotonin reuptake at presynaptic receptor sites.
- Peripheral and central anticholinergic action
- Variable degree of antihistaminic activity
- Mildly sedating

Caution:

- Side effects may include vomiting(20%), lethargy(14%), diarrhea(9%), increased thirst(3%), decreased activity(3%), aggression(2%), seizures(1%) (Novartis 1998)
- Do not use concurrently with monoamine oxidase inhibitors (e.g. amitraz, selegiline, Deprenyl®), selective serotonin reuptake inhibitors (e.g. fluoxetine),
- Avoid using in male breeding dogs
- May cause cardiac arrhythmias including tachycardia and syncope
- Use cautiously with anticholinergic, sympathomimetics other CNS-active drugs including general anesthetics and neuroleptics
- Safety unknown in breeding dogs and in dogs under 6 months
- Must have normal hepatic and renal function
- Use with caution in aggressive dogs
- Avoid using in dogs with a history of seizures or on medications that lower the seizure threshold,
- Use with caution in dogs with increased intraocular pressure, narrow angle glaucoma, urinary retention, reduced gastrointestinal motility due to anticholinergic activity
- May interfere with thyroid replacement medications

CLOMIPRAMINE: CLOMICALM™ (Novartis)
Labeled for separation anxiety in dogs
Dogs: 2-4 mg/kg PO per day SID or split BID

AMITRIPTYLINE:
Dogs: 1.0 - 6.0 mg/kg bid

SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)

Potent serotonergic agents
Uses:  
  a. Compulsive, stereotypical behaviors
  b. Aggression
  c. Anxiety disorders
Mode of action:
- Block serotonin reuptake at receptor sites; serotonergic

FLUOXETINE Reconcile™ (Eli Lilly):
  DOGS: 1 - 2 mg/kg PO q 24 hr
  CATS: 0.5 mg/kg PO q 24 hr

SERTRALINE:
  DOGS: 1-3 mg/kg q 24 hrs

PAROXETINE:
  CATS: 1.0 mg/kg PO q 24 hr
  2.5-5.0 mg/cat q 24-48 hours for urine spraying

BENZODIAZEPINES

Benzodiazepines may also be useful for immediate control of severely affected pets. For those who experience a major panic attack as the owner leaves, alprazolam or clorazepate can be given one to two hours prior to departures. They can be given concurrently with the daily tricyclic antidepressant medication. Caution must be taken when using combinations of psychoactive medication. In healthy dogs, I have successfully used low doses of benzodiazepines in combination with tricyclic antidepressants.

Mode of Action:
- Acts on limbic system and reticular formation
- Potentiates GABA, an inhibitory neurotransmitter

Caution:
- Long term use may produce habituation
- May be withdrawal signs
- May cause hyperphagia, ataxia
- May release inhibitions in fear aggression and disinhibit attack behavior.
- May interfere with learning
- Contraindicated: Impaired liver function
**SELEGILINE HYDROCHLORIDE**

Selegiline hydrochloride is a monoamine oxidase B inhibitor and may help some cases. It should be considered for use in older pets that may also be showing signs of cognitive dysfunction (confusion, disorientation, changes in sleep-wake cycle, inappropriate vocalization loss of learned behaviors, alterations in social interaction with the family).

**Mode of action:**
- MAOB inhibitor

**Caution:**
- Avoid concurrent treatment with other MAOIs (eg. amitraz), selective serotonin reuptake inhibitors (eg. fluoxetine), tricyclic antidepressants (eg. amitriptyline, clomipramine), phenylpropanolamine and ephedrine.

**ANIPRYL® (Pfizer Animal Health)**

Dogs: 0.5 – 1.0 mg/kg q 24 hrs

**PHENOTHIAZINES, PHENOBARBITAL.**

These drugs may provide some sedation and decreased activity, but are generally not effective choices for separation anxiety. The dosage required to completely stop undesirable behaviors by severely affected dogs usually will cause excessive sedation.

**Prevention**

Some time should always be spent discussing similar situations in the future that might trigger a recurrence and how to best avoid problems. When the owner anticipates a significant alteration in schedule or in the amount of time spent with the dog, the changeover should be made as slow as possible. Changes should be made very gradually in a way that can easily be tolerated by the pet. Medication might be considered as a preventative, but should be started at least four weeks prior to major changes. A little forethought will help prevent the anxiety that can develop in association with sudden, major changes in the pet’s life.

**REFERENCES**