

Meeting the Environmental Needs of Indoor Cats

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The veterinary profession is responsible for both the physical and emotional health of our patients. Advances in feline medicine have increased the pet cat's physical health and longevity¹, but emotional and environmental health needs often go unrecognized. Inadequate feline environments frequently lead to boredom, stress, and obesity.^{2,3} Behavior problems and normal feline behaviors that people consider undesirable can also occur when cats' needs are not met. Environmental stressors can even lead to physical health problems, such as feline idiopathic cystitis. These problems occur due to the disparity between who cats really are and the impression that many owners have, which is that they are low maintenance and easy to care for pets.

The cat is a paradox – although fairly adaptable and social animals under the right conditions, cats have retained many of the behaviors of their wild ancestor, *Felis lybica*.^{4,5} In fact, pet cats are still more similar to their wild ancestors than to other species and require an environment that provides for their needs. Understanding the cat, its normal behaviors, and its needs can often prevent or resolve stress, boredom, and behavior problems. Regardless of the age and physical health of the cat, and regardless of whether the cat is indoors only, indoor/outdoor, at home or at the veterinary practice, providing for the cat's environmental needs is not optional but rather essential for its welfare.³

Feline welfare and the veterinary responsibility

Within the past decade, a large number of worldwide veterinary organizations have rewritten their veterinary oaths to emphasize welfare. Animal welfare is defined by the AVMA as: "...how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress. Protecting an animal's welfare means providing for its physical and mental needs." Many feline patients are not allowed to express innate behaviors, often leading to fear and stress - to poor welfare.

Understanding the cat and its needs

Cats as solitary hunters

Because cats are solitary hunters of several small prey daily, they must maintain their physical health and avoid danger. They do so through two major protective mechanisms – territoriality to maintain safe space and having a heightened fear response. Familiar territory provides cats with a sense of control over their physical and social environment.⁶ Having a sense of control - even if it is not exerted - makes the cat more comfortable and reduces stress.⁷

A primary goal of communication between cats is to protect territory and avoid physical altercations.⁸ They communicate through body and facial posturing, as well as via their senses. Scent marking is most important for cats, with scent and pheromonal signals used as distance communication to keep other cats away without the need for physical contact. Scent marking occurs via facial and body rub marking, scratching, urine spraying, or middening (fecal marking). Spraying in neutered cats is usually secondary to stress in the environment.

Cats possess a heightened fear response as a protective response to fear.⁹ If cats are forced to leave their familiar territory or a threat enters their territory, they respond to this confrontation by avoidance or hiding, with fighting only occurring if there are not other options to protect self. Fear commonly occurs when a cat is taken outside its environment and brought to the veterinary hospital. Providing a place to hide for both inpatients and out-patients can prevent fear-associated aggression.

Providing choice in the environment through multiple resources - hiding, perching, feeding, water, and toileting areas - in multiple locations in a multi-cat household will reduce fear and provide cats with a sense of control and more secure environment.³ This is important regardless of whether it is the home environment, veterinary practice, cattery, or shelter.

Feline environmental needs

Safe space

Hiding is a coping behavior that cats often display in response to changes in their environment.¹⁰ In the home, this could be an unfamiliar person or pet. Problems often occur with a newly adopted cat being introduced to already existing household cats without gradual introduction. Even if it is not a newly introduced cat, it is not unusual for cats that live in the same household not to like each other and choose to rest in a safe place away from others. Even affiliate cats – cats that like each other – prefer to sleep alone and out of sight of others approximately half the time.⁶ Appropriate sleeping areas are also good hiding places, such as a box, a cat bed with high sides, or a carrier with soft bedding such as fleece.

In the veterinary hospital, a safe place is necessary for both in-patients and out-patients. The carrier – especially if the cat has positive experiences and familiarity with it in the home environment – is an excellent safe place. Allowing the cat to rest in the

bottom half of the carrier during examinations and providing either the carrier or another hiding place during hospitalization or boarding will increase feline safety and security, and decrease fear-associated aggression.

Elevated resting areas

Increasing overall space by providing cat trees, perches, shelves, or other vertical space helps prevent conflict between cats.³ Cats can also monitor or oversee the environment from a vertical space.

Scratching

Scratching is a normal feline behavior that marks territory with both scent and visible markings. It also is done to sharpen claws, remove old sheaths, and to stretch muscles. Providing scratching posts with preferred texture, such as sisal rope or natural wood, as well as in multiple locations helps prevent furniture destruction. Posts should be placed in locations where cats prefer to scratch – usually next to a most prominent piece of furniture, but sometimes also where new scents occur (e.g., the front or back door).

Normal feeding behavior of the solitary hunter

Cats are not pack hunters, but rather solitary hunters, eating 10-20 small meals per day, with repeated cycles of hunting to catch their small prey. Not all attempts to catch prey are successful (some suggest that up to 50% of the hunt cycles are not successful).¹¹ Think about how much time and energy the cat utilizes just to survive!

Compare that to what happens with many owned cats. People usually control the feedings, often providing 1-2 meals daily of highly palatable food. The inability to control access to food is associated with feline stress.¹² The sedentary house cat expends very little energy and time hunting, and more time eating. In some countries, including the US, many cats are kept indoors. Whether to protect the cat itself or wildlife, failure to provide opportunities for predatory behavior may deprive cats of mental and physical activity, and may contribute to development of obesity and other health problems.^{11,13}

Because people are social eaters usually enjoying meals together, they often provide multiple cats with food either in one bowl or in bowls placed side-by-side, not recognizing that this causes competition for food resources and stress for the cat. One can understand why some cats may eat large volumes very rapidly, often overeating, and perhaps regurgitating. Stress is usually the short-term result, and obesity and obesity-associated diseases are more long-term outcomes.

Regardless of how much cats are fed, the hunting instinct still exists; cats often bring in these unwanted “presents” to their people. Cats are also crepuscular animals, hunting primarily at dawn and dusk, when their prey is usually present. This sometimes leads to waking owners during the wee hours of the morning, which can be quite annoying for humans. Often owners inadvertently reinforce this behavior in their attempt to quiet the cat so that they can go back to sleep, leading to a long-term and frustrating problem for owners. Client education can prevent this problem as long as we welcome clients to discuss their frustrations or concerns about their cats with us.

As veterinarians, we have the opportunity and responsibility to educate clients about normal feeding behavior of the cat as part of the nutritional advice we provide. This will help prevent both medical and behavioral problems, obesity, and stress in the home environment. This can be done by simulating “hunting” through the use of food toys or puzzles, tossing kibbles, or hiding them around the house. This more normal feeding behavior will increase exercise, reduce boredom, and help prevent obesity.¹⁵ Providing feeding areas in multiple locations which are out of sight of each other will prevent competition for food resources.

Drinking behavior:

Cats in the wild drink water in locations separate from food. Some cats prefer running water, and some still water. Provide water dishes in multiple locations and away from food.

Play behavior

Queens teach kittens to hunt through play behavior. The rough tussle and tumble of kittens help them hone their hunting skills. Kittens and even adult cats, especially if housed singly, may want to play with their owner’s hands and feet in the same way. When young, people often think this is cute, and unknowingly reward the behavior. Play aggression can lead to human injury and zoonotic disease. Playing with an interactive toy minimally once to twice daily can prevent this problem. Cats learn to anticipate and prefer the routine of playing daily at a certain time, even if toys are rotated. Cats playing together also provides an outlet for this behavior. Self play is also important, and can be provided through puzzle feeder toys or other favored toys (e.g., hair scrunchy, foil or paper ball).

Toileting areas

Litter boxes should be placed in multiple locations around the home, but away from food, water, and sleeping areas. It is not uncommon for cat owners to prefer to place 2 or more litter boxes in the basement next to each other. This poses multiple problems – usually there are noisy appliances and equipment in the basement, the boxes next to each other don’t provide easy access to a box if a more confident cat is blocking a timid cat, and a cat with degenerative joint disease or another condition making it difficult to get downstairs – that can lead to a cat soiling outside the litter box.

Many litter boxes are also too small for cats. Cats prefer larger boxes so that they can turn around, dig, and eliminate. Boxes should be 1.5 times the size of the cat from the tip of the nose to the base of the tail. Dog litter boxes and plastic storage containers with an opening make excellent cat boxes.

Some cats will eliminate in any type of litter. Others prefer a soft consistency, such as sand over pebbles. Deodorizers or scented litter since pine are developed to attract consumers and not the cat. Some cats find them offensive. Most cats do well with unscented clumping sand litter.

Scooping boxes a minimum of once daily and changing boxes completely when needed (weekly for clay or non-clumping litter and once every 2 or more weeks for clumping litter) will also help to prevent house soiling problems.

Single vs. multiple cat households

Cats are social animals, but their social system is flexible, meaning that cats can live alone or in groups called colonies if there are sufficient resources.^{5,11} Cats that like each other demonstrate affection towards each other by rubbing against or grooming each other, or sleeping in close physical contact.

Cats usually do not readily welcome unfamiliar cats. In a study of 1,286 relinquished cats, relinquishment was associated with the number of pets in the household, as well as new cats being added into the home environment.¹⁴ Introductions must be gradual, and with all resources available in multiple locations to prevent the need to pass an unfamiliar cat.

Just because cats come together for feeding or to sleep on the same bed, it doesn't mean that they like each other or that stress isn't occurring in the feline household; in many households, cats come together because the primary resources are placed in one location. Since cats are more likely to rest or sleep alone, multiple comfortable resting areas should be provided. Inter-cat conflict and behavior problems often occur because household cats don't have multiple resources in multiple places, and therefore cannot avoid the other cat(s).

Multiple resources with easy access, and out of view of other resources must occur. This includes hiding places and use of vertical space to allow cats to be apart if they so choose. Vertical space increases overall space and provides for the cat to oversee the environment. Litter boxes, food, and water stations that are placed in different locations so that individual cats don't need to see each other reduces competition for resources, bullying, and stress.¹² Serious consideration should be taken before adopting a new cat if cats already exist in the home. Clients should be educated to let cats choose their own affiliates, and be made aware that the greater number of cats in a household, the greater the chance of behavior problems.

Conclusion

The dilemma of what cat owners want and what cats need can both be met when behavioral health is incorporated into veterinary practice. When we understand cats and treat them as the species they are, we can enrich their lives and increase their welfare, further enhancing the bond we share with them.

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