

Inside of a Cat: Do You Really Know Your Feline Patient?

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Cats are often considered affectionate and self-sustaining house pets, although their genetic and behavioral background is remarkably similar to the solitary and territorial wild progenitors from which they have evolved. Many of the health and behavioral problems we see in our pet cats are due to a basic misunderstanding of natural feline behavioral needs. Cats have the amazing ability to adapt to most environments and they will continue to enrich our lives and peacefully co-exist with other animals if cat owners can learn to provide the optimal emotional, social, environmental and physical needs for our feline companions.

Genetic and archeological evidence suggests that cats (*Felis silvestris catus*) started their domestication journey about 8,000-10,000 years ago.¹ Ancient cultures in various geographic locations around the world began to tame wild cats primarily to be vermin hunters and possibly pets. However, domestic cats are all decent from one ancestor *Felis silvestris lybica*, the Middle Eastern/North African wildcat. Modern day domestic cats are extremely similar in physical appearance and physiology to their direct wild ancestor and cousins because their natural hunting behaviors were very useful to humans, eliminating the need for strong human selective breeding pressures.^{1,2} Cats are unique among domestic species in that they are obligate carnivores and the feline sensory system is geared exclusively for hunting small prey items. Cat olfaction and pheromone detection is not well studied but is likely a very important source of social and environmental cues that deserves more attention.³

Unlike their basic morphology, the social system of house cats has changed substantially with the species' "self-domestication." Domestic cats are the only small cat to form social groupings when free-ranging. By evolving a social system that can allow the individuals to tolerate physical proximity, cats have taken advantage of the often highly concentrated food (prey) sources provided by human dwellings. Group living likely evolved from maternal-offspring and related females cooperatively kitten rearing. Friendly behavior towards other cats or people is very similar to behaviors kittens display to solicit care from mothers. Evidence suggests that the default state for the modern cats is still a solitary and territorial state but learning, especially early in development, as well as individual genetics can allow for cats to live harmoniously within the same environment. Cats seem to have a relatively short sensitive socialization development period (about 2-7 weeks) during which it is extremely important for a cat to positively interact with people or other species it may encounter as a pet.⁴

Several studies have identified various feline temperaments and sociability attributes towards other cats and people.⁵ The diversity of temperaments can make determining which cats will get along, or at least tolerate each other, quite difficult. Most aggression between cats in a household is territorial in nature because they never learned to tolerate each other and form a social group. Families with this intraspecific aggression can provide plentiful resources in different "territories" within the house. Client education of natural cat social behavior, such as cats don't necessarily benefit from another cat as a social companion, can prevent distressing environments. However, there are desensitization methods that can help improve the likelihood of cats building a positive relationship.

Similarly, client education regarding positive interactions and feline communication signals can prevent most forms of human-directed aggression. Aggression and other unwanted behaviors, such as urine marking, are signs of social stress. Chronic stress, in turn, can lead to more behavior problems and other medical conditions such as lower urinary tract disease. One of the best treatments for stress and these conditions is environmental enrichment.⁶ This can be defined as activities or items that allow an animal to display species-appropriate behaviors. For a cat, this is best provided through small but frequent meals that the cat must "hunt" or manipulate in order to receive. There are a myriad of food-dispensing devices available. Play that mimics predatory behavior, appropriate affiliative behaviors (petting/"grooming" to mimic allogrooming, or simply comforting contact), as well as slightly unnatural behaviors, like trick training, can also be form of mental stimulation and very helpful in reducing stress and improving welfare. Safe (contained) outdoor time should also be considered when appropriate.⁷

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