

# Clinical Handbook of **Feline Behavior Medicine**

Edited by  
**Elizabeth Stelow**



**WILEY** Blackwell

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Feline Behavior  
Medicine**



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*Edited by*

*Elizabeth Stelow  
University of California  
Davis, CA, USA*

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*While this volume has been a labor of love, it has also been a bit of a distraction from my other commitments. I would not have had the time, emotional fortitude, and humor to see this commitment through without the unending support of my husband, Joe DiNunzio. I would have been equally stymied without the benign neglect of our teenage twins, Ainsley and Rowan. Had they not been happily out there living their own best lives, I would never have found the time to complete this volume. To all three of you, I am forever grateful and dedicate this book to you.*



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## Preface

When the publishers proposed a book on feline behavior, I knew I wanted to develop something that the veterinary general practitioner, veterinary technician, and veterinary student would find clinically useful. My initial research included a meeting with a friend and general practice veterinarian, Dr. Aine Coil. I asked – and she told me – what challenges she faces with feline behavior and what resources would be most helpful.

Based on that conversation, the framework of the book was born: A book that serves both as a quick reference during a patient appointment and a “deep dive” resource for when the clinician, technician, or student has time to read and prepare for a case ahead of time.

There are a number of “background” chapters that can inform clinical cases but are not quick-reference oriented. These include normal social behavior, preventing problem behaviors, play, cat relationships in the home, and cats in the clinic.

Most of the clinical chapters have a section on what’s normal and what’s not, formatted in a way that can be easily consumed during a patient appointment. Some have flow charts for quick decision making. Others have forms for the clients to complete to further discussions.

Ultimately, the volume serves to aid the veterinary practitioner as they guide their medicine and their clients toward better welfare for their feline patients.



Dublin (gray) and Chantal (black and white) enjoying a cuddle on the sofa.

## Acknowledgments

This volume would not have come to be without the faith of the publishers, my colleagues, and a cadre of gifted and insightful contributing authors.

I thank all of this book's editors at Wiley. They have been enthusiastic, supportive, and extremely patient. I don't recommend trying to pull together a book during a global pandemic and a breast cancer diagnosis. But, if you must do so, you want this Wiley team on your side.

I thank my friend and colleague, Dr. Aine Coil, for sharing what the general practitioner needs to know about feline behavior.

I thank my colleagues and friends at the UC Davis Behavior Service for their key role in shaping the skeleton of the book and reviewing the proposal. Without Dr. Sun Kim and our technician Michelle Borhardt, there is no telling the structure the book would have taken. Drs. Bain, Buffington, Delgado, Grigg, and van Haaften were extremely supportive and insightful.

I cannot even begin to express sufficient gratitude to the contributing authors for this book. Throughout the stops and starts, they have been dedicated, flexible, and so very giving of their writing talents and knowledge. I thank each and every one of them for contributing. The world of feline care is considerably richer for their involvement in it.

## About the Companion Website

This book is accompanied by a companion website:

[www.wiley.com/go/stelow/behavior](http://www.wiley.com/go/stelow/behavior)

### QR Code:



This website includes patient history forms, client handouts, how-to videos, and other support materials for preventing, diagnosing, and treating behavior problems in cats.



# 1

## Introduction to Feline Veterinary Behavior

*Elizabeth Stelow*

### Background

There is little doubt that a veterinarian can be one of the most influential participants in the life of an owned cat. Clinicians assist with preventative, emergent, and chronic medical care and should provide the majority of counseling the owners receive regarding the prevention and treatment of problem behaviors. An owner's knowledge about the needs of their cat cannot be underestimated in its impact on the cat's overall welfare: The owner who understands cat behavior and has a stronger bond reports fewer problem behaviors, while the owner that does not understand their cat is more likely to respond to unwanted behaviors with punishment, leading to worsened welfare.<sup>1</sup>

It is estimated that up to 40% of owned cats in the United States have exhibited problem behaviors of some kind.<sup>2,3</sup>

Feline behavior problems can lead to injury of owners and other pets, erosion of the human-animal bond, and the owner's unwillingness to keep the cat.<sup>4</sup> In fact, behavior problem is the number two reason given for a cat being relinquished to a shelter; the number one is dropping off entire litters to be placed in homes.<sup>5</sup>

But, many owners don't come to veterinarians with behavior problems. In a 2002 study by Dr. Laurie Bergman, only 26% of owners with urine marking cats had presented this problem to their veterinarians. Why? It may be because owners

- 1) think veterinarians are interested in only medical issues
- 2) believe veterinarians aren't competent or trained in addressing behavior problems
- 3) aren't always asked about behavior proactively during a routine or "medical" visit.

Unfortunately, these owners are somewhat justified in their beliefs. In 2001, McMillan found that only 25% of veterinarians make behavior questions a standard part of their history taking.<sup>6</sup> And, in one study, only 2/3 of the 70 veterinarians surveyed could correctly distinguish between urine marking and toileting based on a case presented to them.<sup>7</sup> In yet another study, six veterinarians willingly had their vaccine consultations recorded. The viewers of those recordings noted that only 10 of the 58 behavior problems mentioned by owners to their veterinarians were addressed.<sup>8</sup>

In fact, veterinarians should be on the front line of preventing or addressing behavior problems; but they often aren't. There appear to be two key reasons from the standpoint of the veterinarian.

First, it is possible that veterinarians don't see the value in exploring and treating problem behaviors. One 2004 study reported that, when veterinarians in small-animal practice ranked the skills

needed by new graduates from veterinary schools, “behavior” averaged 16th in importance.<sup>9</sup> We tend to put effort into what we value.

Second, it may be that clinicians see the value, but don’t feel comfortable asking about behavior because they’re not certain they can help. In one study, half of the clinicians surveyed in small-animal practice said they lacked the training in behavior to provide consultations with owners, despite behavior issues being raised by owners weekly.<sup>10,11</sup> In the study with the six veterinarians video recorded during their appointments, five of the six reported feeling unable to meet their clients’ expectations regarding behavior problems, mainly due to inadequate training on the subject.<sup>12</sup>

This is not a new concern. In 1999, Gary Patronek raised the issue of the disconnect between the level of behavioral advice required by clients and the level offered by veterinarians.<sup>13</sup>

The challenge is that this lack of intervention on behalf of feline patients has measurable effects, as seen in the statistics about relinquishment and human–animal bond maintenance noted above. Further, the curious owner will find information in websites, books, or from friends that may not be current, appropriate, or safe; and they may not have the ability to see the potential harm.

Another hazard of lack of veterinary behavior guidance is that not all clients are aware that their behavior with kittens can prevent – or lead to – problem behaviors in the future. These behaviors can include “nuisance” behaviors like scratching items or climbing on people (See Figures 1.1, 1.2) but can also include aggression toward people or other cats. Client information can help, as long as the veterinarian knows what to tell the client and the client trusts the veterinarian to understand.<sup>14</sup>

Certainly, if clinicians are to be of assistance to clients in dealing with their cats’ behavior problems, they will need to want to do it and be prepared to do it. One role of this book is to provide the interested clinician a resource to feel more prepared.

If we are to encourage owners to turn to us, we must be proactive in asking about their cat’s behaviors and have a plan for diagnosing and treating the problems we uncover. The purpose of this introduction, then, is to provide the practitioner with useful tools for gathering behavior



**Figure 1.1** It is crucial that veterinary professionals be able to assist their clients with feline behavioral issues before the human–animal bond is irrevocably damaged. Craig Adderley/Pexels.



**Figure 1.2** Clients should be led to prevent future behavior problems in cats through their interactions with kittens in the home. hansiline/pixabay.

information and common treatment options. Individual clinical chapters (5–12) will provide detailed information on diagnosing and treating the specific problems presented there.

When a practitioner finds that a cat is engaging in a problem behavior, it's important to approach the diagnosis and treatment in an efficient and systematic way.

## Behavioral Diagnosis

A behavioral diagnosis requires the following:<sup>15</sup>

- A detailed history, both medical and behavioral
- Observation of the problem in person or via video
- A way to rule out medical differentials (CBC, serum biochemistry, specialized lab tests, imagery, etc.) and knowledge of key medical differentials for the specific problem behavior
- Understanding of specific diagnostic criteria for the specific problem behavior

### History

A detailed history is the basis for making a tentative behavioral diagnosis. To gather the most comprehensive information, it is most useful to request that the owners complete a form that prompts them for a wide variety of background details.<sup>16</sup> An example of a thorough history form is provided in Appendix 3 and also on the website for this book. Follow-up questions to be asked during the actual appointment are based on the information in – and missing from – the owner-prepared form.

The types of information to be gathered include:

**Table 1.1** Path to a thorough behavioral history.

Basic information	Signalment: pet's name, age, reproductive status, breed Acquisition: age, source, known conditions at previous home, and disposition of littermates Family: Names, ages, move-in dates of all household members (people and animals) Medical history: Include both disease/injury history and any previous behavioral assessments
Environmental information	Feeding routine: diet, how/where fed, appetite, behavior toward people when eating Litter box and hygiene information: number, locations, substrates, cleaning schedule, and routine Household enrichment: toys, interactive play time, window perches, trees/shelves, outdoor time
Owner information	Goals of this and future appointments Willingness and ability of owner to implement treatment elements If aggression, how severe does the owner perceive the aggression to be? Each family member's relationship with the cat, including trust in their safety
Incident information (for aggression problems)	Please see chapters on aggression for this information

### Basic Information

The signalment will be the key identifiers in the cat's medical record. But it is important to gather such basic information as how and at what age the cat was acquired, what humans and other pets live in the household or frequently interact with the cat, and any past medical problems and how they were resolved.

There can be clues about the cat's current behavior in even the most basic aspects of its history. For instance, other pets in the household can be an underlying stressor or may provide a good outlet for appropriate play; but it's important to know which. People moving in or out of the home frequently can be a source of stress that owners don't always consider when they think about triggers for the aggression. And, there may be a medical problem that coincides with the onset of the aggression that the owners did not equate with a possible cause.

### Environmental Information

The cat's environment can have a profound impact on its behavior; so it is important to review the layout of the house, the enrichment provided, and the litter box and other routines. Because lack of suitable outlets for play and predatory behaviors can be implicated in aggression problems,<sup>17</sup> it is crucial to understand what resources are provided to your feline patients.

### Relationships of Owners and Cats

Aside from the cat's motivation, little has more of an impact on outcome than the cat's relationships in the home, the owners' goal, and their ability to implement an effective plan. So, this area of investigation is very important and often overlooked in the interest of time or the avoidance of difficult discussions. Here are ways to think of and explore these factors:

**Owner relationships with the cat.** Ask each owner to describe his/her relationship with the cat. Consider these answers as you focus on different elements of the plan. Who is most invested? Who feels most detached?

**The role of owner in the outcome.** The owners must be open to – and see value in implementing – all of the elements of the treatment plan. It pays to mention early in the appointment that the treatment of this problem will require some changes in the way the household runs; then ask if the owners are ready to know how. Simply asking for their permission before proceeding can influence how open they are to hearing the plan. Then, as you discuss actual plan elements, you can check in further about what can and can't be implemented easily.

**Owner goals.** Ask for the owners' goals directly. It's best not to assume that you understand what the owners need as an outcome – or even that all of the owners present need the same outcome. This is especially true of the person most likely to be attacked versus the others. So, look from person to person and ask directly what each one is looking for as a goal. There's no need to address whether those goals are reasonable or not – this discussion is fact finding for the practitioner.

**Assess owners' ability to implement a treatment plan.** As you determine how complicated a given case likely will be, begin to assess each owner's ability to implement the plan that is taking shape. Ability may be affected by an owner's limitations (physical problems, age – especially children, and available time to devote to the plan) or household limitations (schedules, physical space and home layout, and overall activity levels – chaos versus quiet). As the practitioner presents the plan, these limitations will need to be taken into consideration and may affect the outcome of the appointment itself if the plan simply cannot be implemented at all. These appointments may lead to conversations about rehoming or euthanasia.

**Owner assessment of the problem.** Ask each owner how severe they consider the aggression to be. This is a set up for the next conversation (if needed) about trust.

**Owner risk tolerance and trust.** If the presenting complaint is aggression, and the owners have assessed the aggression as severe, ask each owner how risky that owner thinks life is with the cat and how much the owner trusts the cat (and can envision trusting the cat in the future). It is best to get this information into the open, in case owners are feeling differently about the cat. The plan may be a non-starter if one owner states that he/she will never be able to trust the cat again. It's best at that point to focus on all owners seeing that rehoming/euthanasia is the only solution possible for that owner.

While objective descriptions of the behaviors are more useful than subjective assessments in supporting a diagnosis, studies have shown there is a limit to what the owners can tell you about both body language and specific triggers, because most owners lack more than a superficial awareness of behavior in their pets.<sup>18</sup>

## Observation

Observation of the behavior can be in-person during the appointment or via video provided in advance by the owner. Depending on the type of behavior problem, the clinician will prefer either of these options. It is entirely possible that, even with both types of observation, the clinician will not see the behavior being reported by the owner; this makes the details in the history form even more important.

## Medical Differentials

Each behavior problem presented in this book will contain a list of medical differentials that the clinician should try to rule out before proceeding with treatment of a behavioral cause.

## Diagnostic Criteria

Likewise, each behavioral diagnosis presented in the book will also present the diagnostic criteria for that diagnosis.

Once a diagnosis has been established, the clinician will turn their attention to the treatment plan.

## Treatment

While treatment for behavior issues varies depending on the diagnosis, signalment, owner lifestyle and commitment, and other factors, there are some general treatment categories that should be considered for each plan. These include management, tools, cat-owner relationship, behavior modification, and medications. Here's a sensible way to think about these areas of treatment:

### Management

The goal of management is to change the circumstances around the problem behavior in such a way that the behavior is less likely to occur while the remainder of treatment is implemented. In short, management often comes down to avoidance – of the cat being in places where the behavior most often happens, of people interacting in a way that leads to the behavior, of the cat having access to target items/people/other pets. By avoiding situations, we accomplish two things: First, the harm to the targets of aggression, the soiling of carpets, and other possible damage due to the behavior is minimized. Second, the cat has a break from engaging in the behavior we hope to treat, thus making the behavior less of a habit while we try to replace it.

Examples:

- Avoid interacting with the cat when it's displaying the body language of arousal (dilated pupils, twitching tail, rippling muscles along its back), if those signs often predict aggression (see Figure 1.3)
- Separate fighting cats when they aren't being supervised



**Figure 1.3** Avoid approaching a cat showing defensive body language. Photo from pxhere.

- Keep the household cat from viewing outdoor cats if he redirects aggression to his owners or urine marks when he sees them
- If visitors are a fear or aggression trigger, put the cat in a separate room with lots of resources when people visit
- Close bedroom doors at bedtime if the cat wakes people in the middle of the night for attention

Also considered a part of management, environmental enrichment is key to the happiness of indoor cats.<sup>19</sup> Please see Chapter 2 for more information.

### Tools

Many management ideas require tools to implement. For instance, blocking visual access to outdoor cats is easiest with opaque window privacy film. Offering a variety of litter boxes may help the owner solve a toileting issue. And enrichment is often about things (toys, perches, hiding spots, etc.) being added to the living spaces. (See Figure 1.4).



**Figure 1.4** Cat trees offer extensive enrichment, including climbing, playing, and the sense of vertical space. Photo courtesy of Liz Stelow.

### Cat–Owner Relationship

There are a couple of ways to enhance the relationship between a cat and its family members:

- Predictable interactions. If the cat is anxious or fearful, or if the owners have responded harshly to the cat’s behavior in the past, the first step in relationship-building is to be predictable around the cat. Studies have shown that an animal’s ability to predict stimuli, even those that are aversive, has an impact on the stress associated with those stimuli.<sup>20,21</sup> Depending on the behavioral diagnosis, “predictable” interactions may require the owner(s) to decide on the amount or style of physical restraint, play, and handling the cat will receive; on how to respond when the cat does something they do or don’t like; or on whether the cat is always or never allowed in certain rooms, on furniture, or on countertops. Each case is unique in the “unpredictable” situations the cat faces.
- Training. Cats can be trained to do a number of “tricks,” some of which can be helpful in redirecting the cat’s attention when necessary and others that are just for fun. Training should always be done with treats or other valuable rewards, and may or may not be done using a clicker.
- Avoidance of punishment. Regardless of the way they manifest, behavior problems are most often based in fear, anxiety, frustration, or other emotional motivation. As such, they are not easily controlled by punishment. In fact, punishment can aggravate a tense situation by increasing the chance of aggression and exacerbating any underlying stress or fear.

## Behavior Modification

The most common way to change how a cat feels about its triggers is systematic desensitization and counterconditioning. The principles of this technique are:

- The cat is exposed to a very small “dose” of the triggering stimulus (item, noise, person, cat)
- He is rewarded for this exposure
- He can leave any time he wants if the intensity is too much
- He always remains calm and relaxed throughout the exposure
- Over time, exposure is increased by moving closer to the item or person, or having the volume of the sound increased. All previous rules apply at this increased exposure

The final goal is to have a cat that is no longer concerned about its triggers. This may take a few sessions or many. Everything must happen at the cat’s pace.

## Medications

For many behavior problems that have an emotional underpinning, medications may be either helpful or necessary. Please refer to individual chapters for suggestions and Appendix 1 for greater detail on options.

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## 2

### Normal Feline Social Behavior

*Kristyn Vitale*

When attempting to address problem behaviors in cats, it is first important to have a solid foundation in typical feline social behaviors. This chapter will cover several topics including normal social behaviors cats engage in with other cats, cat body language cues, the structure of feline social groups, and characteristics of the human–cat relationship. Although we lack a common verbal language with cats, we can examine cat social behavior and body language as an indicator of the mental state of the cat and apply this to inform the best ways to enact our interactions with them.

### Social Communication and Body Language

#### Normal Social Behaviors

Social behavior is any interaction between two or more individuals.<sup>1</sup> Social behavior may occur among members of the same species or between members of different species. Domestic cats display an array of social behaviors with one another. Even cats which do not live in social groups display social behavior, such as during mating and the rearing of kittens. Cats have behaviors which fit into several categories of social behavior; these include affiliative, agonistic, and investigatory behaviors.

Affiliative behaviors are any social behavior that strengthens group cohesion and social bonds, often reducing aggression between the individuals. Common affiliative behaviors displayed by cats include allorubbing, allogrooming, social rolling, spending time in contact or near to one another, and social play.<sup>2,3</sup> In an allorub, a cat presses the head or side of their body against an individual while moving, effectively rubbing up against the social partner. During allogrooming a cat uses their tongue to lick the body of another individual (Figure 2.1). In a social roll, the cat turns over onto their back and exposes their belly in the presence of a social partner (Figure 2.2). Exposing the ventral area in a social roll or sitting with the stomach exposed can be taken as a sign of trust. The belly is a location of vital organs and to expose this vulnerable location to another cat or a human can indicate the cat is not threatened. Cats also spend time near social partners. They will lay together, sit together while in physical contact, or sit in close proximity to one another, a behavior also known as huddling.

In social play, a cat interacts with a social partner in a non-harmful manner.<sup>2,3</sup> When two cats play with one another, the style of play can very much depend on the two individuals involved. Play can sometimes appear rough and look almost like aggression to the untrained observer.

**Figure 2.1** Two cats sit together after a short bout of play. One cat begins to groom the other with their tongue.



**Figure 2.2** A cat engages in a social roll after being approached by their owner.

During social play, two cats may chase and wrestle with one another, bite each other's necks, smack each other with their paws (also known as cuffing), and rake their back legs against the conspecific's belly in a motion very similar to dissecting a prey animal.<sup>2</sup> Although this may sound like an aggressive encounter, during play, the more salient signs of aggression are missing. There is a lack of aggressive vocalizations and the behaviors the cats display are inhibited, or not produced to their full potential. A bite during play is not enough to break the skin, a play cuff does not typically involve the claws being extended, and the belly raking does not rip the conspecific's belly open. During play the interaction is mutually initiated and there will be brief pauses in which both cats take turns reinitiating the play bout. Sometimes play will end with the cats sitting together or allogrooming, as seen in Figure 2.1. So, when is it not play?

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