



Abstract

Cats are a predatory and prey species with unique resource and territory needs that are easily disrupted by events such as veterinary visits. Disruptions increase protective emotions in the cat, leading to negative behavioral outcomes during the visit. A Cat Friendly veterinary environment helps minimize the cat's protective emotions and promotes a better, safer experience for the cat, the caregiver, and the veterinary team. Creating a Cat Friendly environment does not require renovations or major expenses, only thoughtful, creative adaptations to the cats' needs that give them a sense of control and safety.



BEHAVIOR

From the Cat's Point of View: Creating a Cat Friendly Veterinary Environment

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There is nothing like the prowling, pouncing activity of a cat engaging in their natural predatory-play behaviors. We often think of cats as a predator species, but successful interactions with cats depend more on our understanding of cats as a prey species. Being both the hunter and the hunted has naturally led to the development of unique behaviors and sensory capabilities. Cats need to live in a defined territory where they feel safe. They need routines and a reliable, ample supply of resources with minimal intruders that might pose a risk to their safety or resource supply. Disruption to cats' routines and removal from the safety of their territory

negatively affects their emotions and behavioral responses. The 2022 International Society of Feline Medicine (ISFM)/American Association of Feline Practitioners (AAFP) Cat Friendly Veterinary Environment Guidelines explore cats' unique needs, describing options for simple changes that will create better veterinary visits for feline patients, their caregivers, and veterinary team members.¹

CAT FRIENDLY INTERACTIONS

The principles of Cat Friendly veterinary interactions are reviewed in the 2022 ISFM/

Take-Home Points

- As a predatory and a prey species, domestic cats have unique needs that are disrupted by all aspects of the veterinary visit, leading to protective emotions such as fear-anxiety, pain, and frustration.
- Veterinary team members have many opportunities to educate the caregiver on best practices for preparation and travel to the clinic.
- Creating a Cat Friendly veterinary environment minimizes the cat's protective emotions and improves the experience for the cat, the caregiver, and the veterinary team.
- Equipment and techniques commonly used to forcibly restrain cats increase the intensity of protective emotions and negative behavioral outcomes and should be avoided.
- Food is a useful way to promote engaging emotions in the cat. Facial massage, other comfort touches, and verbal praise may also be helpful.
- A Cat Friendly veterinary environment does not require expensive renovations but rather creative, thoughtful ways to adapt to cats' needs, giving them a sense of control and safety.

**TABLE 1 The Heath Model of Emotional Health³**

	PROTECTIVE EMOTIONAL SYSTEMS	ENGAGING EMOTIONAL SYSTEMS
Motivational-emotional systems	■ Frustration, fear-anxiety, pain, panic, and grief	■ Desire-seeking, social play, lust, and care
Purpose	■ Adaptive and ensures survival	■ Allows interactions with others, resources, and the environment ■ Enhances and ensures survival
Behavioral responses	■ Appeasement (fidgeting) ■ Inhibition (freezing) ■ Avoidance (flight) ■ Repulsion (fight)	■ Exploration of space ■ Engaging with humans: affiliative behaviors such as face rubbing, body contact, and purring ■ Consumption of food ■ Play with toys, other cats, and humans ■ Care of young

AAFP Cat Friendly Veterinary Interactions Guidelines.² The Heath Model of Emotional Health describes how cats experience protective (negative) and/or engaging (positive) motivational-emotional systems in response to their needs and the world around them (TABLE 1).²⁻⁴ Emotions in cats are not experienced as “feelings” in the same context as humans but rather prompted by systems of emotions that motivate cats to adapt and respond to their environment, thus ensuring their survival.³ Protective motivational-emotional systems relevant to the veterinary setting include fear-anxiety, pain, and frustration. Engaging motivational-emotional systems include desire-seeking, social play, lust, and care. Desire-seeking and social play can be used to good advantage when interacting with cats in the veterinary setting (e.g., offering a tasty food treat).

Cats’ behavioral responses are directly related to their emotions (TABLE 1). Behavioral responses to protective emotions include appeasement, avoidance, inhibition, or repulsion. In the unfamiliar veterinary environment, when cats are experiencing protective emotions, the preferred behavioral strategy is avoidance. Avoidance might include an attempt to escape but might also include hiding or perching.² If cats are not offered the

opportunity to hide or perch, their behavioral response may change to inhibition (freeze) or repulsion (fight). Team members and caregivers often mistakenly assume that the inhibited cat is being compliant. As the inhibited cat is subjected to additional handling without breaks and without options to hide or perch, the cat’s behavior can suddenly turn to repulsion. Cats exhibiting repulsion are seeking to increase distance, and ignoring this behavior will inevitably escalate protective emotions.

How veterinary professionals interpret and respond to the cat’s emotions and behavior dictates the success or failure of interactions with feline patients. A veterinary team that is practicing according to Cat Friendly principles will take the time to understand the cat’s emotions and appropriately respond using strategies that successfully minimize protective emotions and promote engaging emotions. Giving the cat a sense of safety and control by offering breaks and providing hiding or perching options are key strategies toward achieving this goal.

THE VETERINARY VISIT BEGINS AT HOME

From the first visit and throughout the cat’s life, veterinary team members have many opportunities to educate the caregiver on best practices for preparation and travel to the clinic. The guidance and resources that are provided by the veterinary team will help to reduce the stress of travel for both the cat and the caregiver. Visit go.navc.com/3utvabd for a client handout on this topic. Suggestions can be made via telephone or email and through social media education campaigns, allowing caregivers to develop a clear plan for preparation and travel to the clinic.

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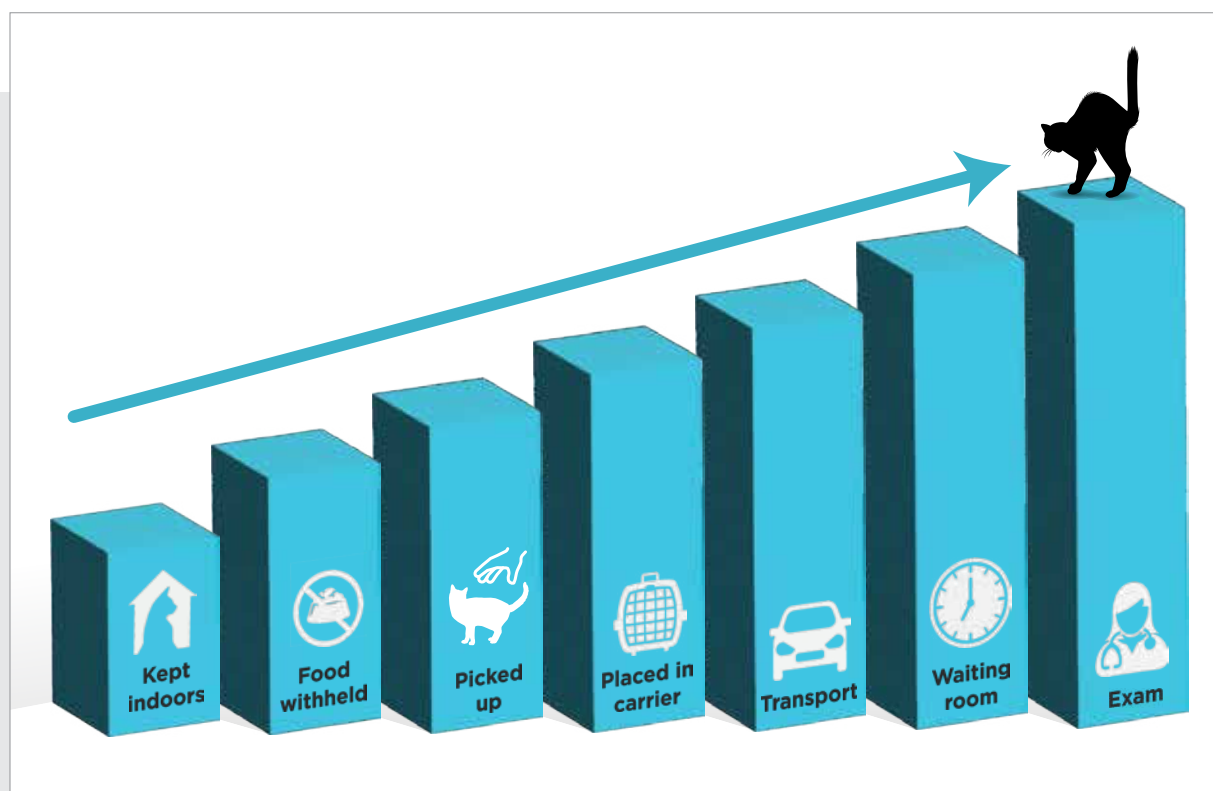


FIGURE 1. Stessor stacking describes the cumulative stress resulting from numerous disruptions to the cat's routine and territory in preparation for the veterinary visit. These cumulative changes increase fear-anxiety and frustration, predisposing to negative behavioral outcomes during the veterinary visit. Adapted from International Cat Care.¹

Stessor Stacking

Preparation for and travel to the veterinary visit disrupts the cat's routine and sense of safety. Examples of disruptions include fasting,⁵ being awakened from a catnap, restricting outdoor access, and being placed into a cat carrier. Each successive disruption causes cumulative stress for the cat, resulting in stessor stacking (**FIGURE 1**). Cumulative stress contributes to protective emotions, potentially increasing their intensity and the likelihood of negative behavioral outcomes. Considering the negative effects of stessor stacking, caregivers will benefit from guidance from the veterinary team before the appointment. Caregivers may not be able to accommodate every suggestion for every visit, but implementing even some of the suggestions will be beneficial. This information will also increase caregiver awareness of stessor stacking and may have future benefit.

Cat Carriers

A major challenge to visit preparation is associated with carrier use and acceptance. Getting the cat into the

carrier is often left to chance, yet there are many resources for choosing the ideal cat carrier (go.navc.com/48QOm1J) and acclimating the cat to the carrier (go.navc.com/42g4mbb). A planned approach will



FIGURE 2. The features of an ideal cat carrier.



reduce protective emotions in the patient and reduce the risk for injury to the caregiver and patient.^{1,2} A longer-term goal is to train the cat to enter the carrier willingly, eliminating caregiver struggles associated with getting the cat into the carrier. Use of behavioral conditioning methods, such as cooperative care training, teach the cat to be an active, willing participant in handling and husbandry.² Caregivers can learn these methods by using iCatCare training videos (go.navc.com/3HrTe1a).

The carrier should always be a part of the cat's day-to-day environment, offering a safe space to rest. The door should be left open, and the lid may initially need to be removed to encourage the cat to use the space (**FIGURE 2**). Include bedding in the carrier and spray it with synthetic feline pheromones 15 minutes before the cat enters the carrier for travel.² This practice has been shown to reduce time to reach sedation and induction drug volumes in cats arriving at the hospital for anesthesia.⁵ Particularly for senior cats and cats with mobility issues, the bottom of the carrier should be covered with a nonslip surface. Old or inexpensive yoga mats can be cut to size to provide traction under the cat's bedding inside the carrier. Yoga mats may be ingested by the cat and therefore should be in the carrier only when in use for travel.

Transportation

Most cats will travel in a full-size motorized vehicle, although they may arrive in a cat stroller, on a bike, or on a smaller motorized vehicle. All modes of transportation are likely to contribute to stressor stacking. Acclimating the cat to the mode of travel takes planning (**TABLE 2**). The vehicle's temperature should be prepared for the cat's comfort. Strong smells and loud noises should be avoided as they can obtund the cat's sense of smell and hearing, theoretically leaving the cat feeling vulnerable to predators. Recommend that caregivers turn the audio system off or consider playing cat-specific music that has been shown in a clinical setting to be associated with lower cat stress and mean handling scores.^{7,8} If possible, the route should avoid road construction and busier traffic to minimize interruptions, noise, and stress to the cat.

WELCOME TO THE CLINIC ... JUST WAIT RIGHT HERE?

Reception areas in clinics tend to be busy and noisy, with phones ringing, people talking and laughing, music or videos playing, and dogs barking or whining. Deliveries might be brought in, and people and pets may be moving into and out of the space. By sight, sound, and smell, cats are exposed to other species,

TABLE 2 Tips for Minimizing Stressor Stacking During Preparation for and Travel to the Veterinary Clinic

STRESSOR	TIPS FOR MINIMIZING PROTECTIVE EMOTIONS
Disrupting routines	■ Encourage the caregiver to consider which routines will be disrupted by the veterinary visit and consider options for minimizing those disruptions as much as possible (e.g., schedule appointments in the morning to avoid interrupting the cat's normal afternoon nap).
Restricting outdoor access	■ Provide the caregiver information about using verbal cues and positive reinforcement to train the cat to return home (requires long-term planning). ■ When possible, schedule appointments for when the cat is more likely to be in the house. ■ Ensure that the caregiver is not penalized for short-notice cancellations in case the cat does not return on time.
Fasting	■ Consider the need for fasting (e.g., anesthesia, bloodwork). Fasting time may be shortened to 3–4 hours after a small wet food meal before anesthesia, at the clinician's discretion.⁶
The cat carrier	■ Encourage the caregiver to make the cat carrier a normal part of the cat's daily environment by using it as a cat bed. ■ Use cooperative care training (go.navc.com/3HrTe1a) to train the cat to go into the carrier voluntarily. ■ Avoid negative experiences in the carrier (e.g., medicating). Carriers should never be used as a confined space in which to punish the cat. ■ Spray bedding in the carrier with synthetic feline pheromone 15 minutes before the cat will enter the carrier.²
Traveling to the clinic	■ When in the vehicle, encourage the caregiver to keep the cat inside the carrier at all times to ensure driver and cat safety. ■ Keep the car at a comfortable temperature. ■ Minimize noise (e.g., music, loud talking). ■ Eliminate strong scents (e.g., air fresheners) that can affect a cat's ability to monitor for predators. ■ Choose a route that is shortest but avoids heavy traffic or construction.



unfamiliar humans, and other cats. Images that show silhouettes of cats in painting, mural, or statue form are potentially threatening to cats, increasing fear-anxiety.^{1,9,10} These sensory experiences further contribute to stressor stacking but can be minimized through adjustments to the environment.

Ideally, cats should not wait in the reception area. Whenever possible, have cats and their caregivers escorted directly into a quiet, Cat Friendly examination room or have them wait in their vehicle until the veterinarian is ready to see them. Since the COVID-19 pandemic, caregivers have become accustomed to curbside protocols and waiting in their vehicle. Another

option is to designate a waiting area separate from the reception desk and away from dogs. Doing so does not require renovations, just a little bit of creativity on ways to separate a small area using office dividers, shelving, or decorative screens, with very clear signs advising that the area is for cats only. The space should include seating for caregivers beside a sturdy, elevated surface for the carrier and cat, with blankets sprayed with synthetic feline pheromones available to cover the carrier.^{1,11} Elevated carriers reduce the cat's sense of vulnerability to predators, and blankets improve the cat's sense of being concealed from threats.¹ Ensure that other cats are not within visual range by positioning seating in a strategic way.

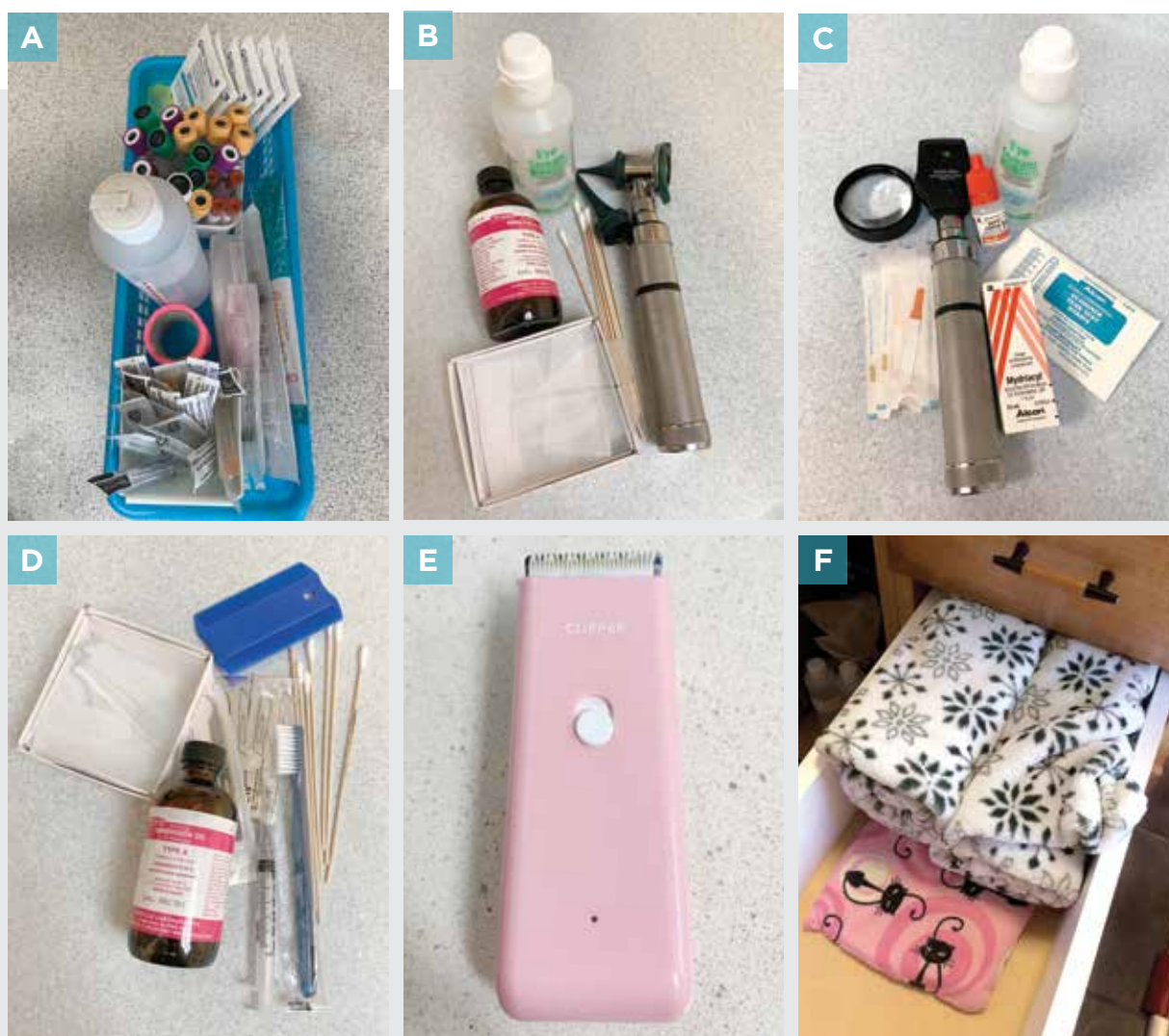


FIGURE 3. Stocking the room with everything that will be needed in an appointment minimizes traffic in and out of the room and eliminates the need to take the cat out of their newly established safe space. **(A)** Blood and urine collection caddy with dilute chlorhexidine solution. **(B)** Ear assessment kit. **(C)** Ophthalmology kit. **(D)** Dermatology kit. **(E)** Example of quiet clippers. **(F)** Blankets warmed by a hot oat bag.



BOX 1 Equipment and Techniques to Avoid

- Scruffing or clips that mimic scruffing (“clipnosis”)
- Cat bags, pillowcases, or any other similar containment receptacle
- Full-body restraint, including full lateral recumbency, tight “burrito” wrapping, etc.
- Gauntlets or gloves
- Muzzles of any kind
- Air muzzles or any other device placed over the cat’s head
- Elizabethan collars of any variety (unless for medical interventions such as protecting a surgical site)
- Cat tongs or rabies poles
- Anesthetic induction boxes/receptacles (not Cat Friendly or safe®)
- Mesh cat “nabbers”

Efforts to minimize noise in the reception area can include turning down phone ringer volume, eliminating music or videos, and escorting dogs and their caregivers directly to an available examination room. Protocols and techniques that minimize fear-anxiety and vocalization in canine patients may indirectly reduce stressors for the feline patient.

THE EXAMINATION ROOM IS THE NEW SAFE SPACE

Room Preparation

The examination room should be where the cat and caregiver spend most, if not all, of the visit. The cat’s sense of safety can be enhanced by dedicating a room exclusively to cat care, thereby eliminating odors from other species. Sounds, smells, and sights should be adapted to minimize protective emotions. If a room cannot be dedicated for cat use only, then consider scheduling half- or full-day blocks of feline-only appointments for 1 specific room.

Prepare the examination table in advance with warm blankets sprayed with synthetic feline pheromones placed on nonslip surfaces (e.g., yoga mats). Spraying synthetic feline pheromones on the examination table

15 minutes before the physical examination has been shown to lower stress levels compared with placebo.¹¹ Synthetic feline pheromone diffusers are also recommended.^{1,2} The space should be free of nooks (e.g., below chairs), high perches (e.g., above cupboards), or other spaces that cats might wedge themselves into or onto. Benches for seating and low shelving are more acceptable options for perching.

Establishing Safety in a New Territory

During history taking, allow the cat time to explore the room if the cat chooses, allowing to verify the safety of the new space. If additional team members are likely to be needed for the cat’s care, they should ideally be in the room early in this process. If this is not possible, it is important to note that any new team member coming into the space should try to spend time gaining the cat’s trust through appropriate Cat Friendly introductions.²

One option to allow exploration is to ensure that the room is secure, place the carrier on the floor, and open the door to the carrier. Cats should be allowed to choose whether to exit the carrier and not be taken out by force. If they choose to come out, they will be able to explore the room and possibly introduce themselves to the veterinary team member(s) present. Leave the carrier door open, allowing the cat the option to enter and exit as needed. For cats that are exhibiting repulsion behavior inside their carriers on arrival, this approach is not ideal. In these situations, reschedule the visit with prescribed anxiolytics or, in urgent cases, admit the cat for mild to full sedation.

Conduct as much as possible of the cat’s appointment in this newly established safe space. Stocking the room with everything that will be needed in an appointment minimizes traffic in and out of the room and eliminates the need to take the cat out of the cat’s newly established safe space and away from the cat’s caregiver (FIGURE 3). Include items in the room that allow for outpatient care, such as those needed for blood collection, cystocentesis, and some treatments (e.g., injections, subcutaneous fluids).

Gentle Handling with Minimal Restraint

The 2022 Cat Friendly task force members were united in the consensus that equipment and techniques

commonly used to forcibly restrain owned domestic cats take away the cat’s sense of control and evoke and increase the intensity of fear-anxiety, pain, and frustration (BOX 1).^{1,2} Studies have demonstrated the negative effects of restraint on a cat’s emotions and behavior and the positive effects associated with passive restraint.^{12,13} As protective emotions increase in intensity, they provoke protective behavioral responses, putting the cat and veterinary team members at risk for injury. In fact, certified AAFP Cat Friendly Practices report reduced team member injuries and fewer injury-related insurance claims.¹⁴ For cats exhibiting a high intensity of protective emotions, it is safer for the patient to be provided with analgesia, anxiolytics, and/or sedation rather than to be forcibly restrained.

When adapting Cat Friendly interaction techniques in a Cat Friendly environment, veterinary team members will increasingly discover that they do not need restraint equipment or forcible restraint techniques (TABLE 3).^{1,2} Cat Friendly interactions offer cats a sense of control and facilitate their ability to cope with their emotions (TABLE 1).



FIGURE 4. Examining the cat where the cat wants to be, at the bottom of the carrier, with the lid removed.

TABLE 3 Cat Friendly Interactions Involving Passive Restraint, Minimal Handling, and Promotion of Engaging Emotions

INTERACTION	DESCRIPTION
Passive restraint	Use only light hands when handling the cat. Avoid applying increased pressure if the cat is trying to reposition or move away; increased pressure will increase the cat’s desire to resist.
Minimize the number of team members involved	The cat may have established some trust with the team member(s) in the initial part of the visit. Adding team members adds uncertainty and is more likely to increase protective emotions in the cat and lead to forceful restraint as the cat opposes the situation.
Allow the cat to retain some control	- Allow cats to choose certain aspects of interactions to give them a sense of control. - Avoid placing the cat in full lateral recumbency or wrapping the cat in a tight towel roll. Cats need to feel that they can leave the situation if they so choose. - Let the cat sit up and/or have at least 2 feet on the table. - Allow cats to go back into the carrier and to take breaks during the examination (including getting off the table). - Examine the cat where the cat is comfortable (e.g., bottom of carrier, on floor, on caregiver’s lap).
Provide warm blankets	Warm blankets sprayed with synthetic feline pheromones can be laid gently over the cat, giving the cat a place to hide and allowing the cat to cope with the cat’s protective emotions.
Examine the cat in the carrier	- Avoid forcing the cat out of the carrier; instead, encourage the cat by giving the cat space and time, and consider lures such as tasty treats. - A cat that is reluctant to exit the carrier can be examined while in the carrier (if the lid can be removed). Replace the lid with a warm blanket so the cat can continue to hide.
Use minimal restraint for sample collection	- Allow comfortable positions for the cat, such as keeping the cat’s feet on the floor and/or sitting up with the ability to visually monitor the room. - If the cat will eat treats or food, continue to feed the cat during sample collection. Facial massage, other comfort touches, and verbal praise may also be helpful. - Cystocentesis: Consider allowing the cat to stand rather than placing the cat in dorsal recumbency. - Medial saphenous vein blood collection: Allow the cat to be sternal at the front end with someone providing food, comfort touches, and/or verbal praise. - Jugular vein collection: Use minimal handling of the head only; avoid stretching the forelimbs out.



Examination

If the carrier door is open but the cat does not voluntarily leave the carrier, the examination may need to take place in the bottom of the carrier, with the lid removed (**FIGURE 4**). Having a warm blanket sprayed with synthetic feline pheromones ready to cover the cat when the lid is removed allows the cat to hide beneath it as a coping strategy for fear-anxiety. Blankets can be warmed in a dedicated drawer by wrapping them in heated oat bags (**FIGURE 3F**). Reasonably priced towel warmers are available if space and budget permit.

Food is a useful way to activate desire-seeking engaging emotions. Be ready with many types of treats (e.g., liquid tube treats, popular dry snacks, canned foods), ensuring that treats offered meet the cat's dietary restrictions. Offer treats passively or from a distance (e.g., on a wooden tongue depressor) to avoid having the cat refuse food simply because it is being offered by a stranger. If the cat does not want food, take it away. The goal is to allow the cat to choose whether to eat the food. Smearing food onto the cat's nose, paw, or fur is not recommended.² Food and toy motivators may

also help lure the cat out of the carrier, onto the table, or onto the scale. Toys cannot be easily disinfected, so be prepared to send them home with the cat.

HOME AWAY FROM HOME: THE WARD AND INTENSIVE CARE UNIT

A hospital stay separates cats from their safe home territory and from their caregivers. Hospitalization sometimes cannot be avoided, although duration of stay should be minimized. Creating a Cat Friendly space in ward cages can minimize protective emotions during a hospital stay (**TABLE 4**).¹

Cage Size

While it may not always be possible to adhere to in pre-existing spaces, suggested minimum cage dimensions depend on whether the length of stay is less than 24 hours or longer (**TABLE 5**).¹ Renovations, including the installation of new cages, offer an ideal opportunity to adhere to these minimum cage dimensions.

TABLE 4 Simple Strategies for Minimizing Protective Emotions for Cats in the Veterinary Hospital

SENSE	CAT FRIENDLY CHANGES
Sight	- Remove images that show silhouettes or outlines of cats in painting, mural, or statue form. - Provide blankets or towels to cover carriers. - Provide safe places for cats to hide and spaces for more confident cats to perch on. - Keep clinic cats out of the cat waiting area during appointment hours. - Cover the front of the ward cage with semitransparent (sheer) draping material to increase the cat's sense of concealment while still permitting staff to visually monitor the cat.
Sound	- Consider playing cat-specific and certain classical music, which seems to have some benefit for hospitalized cats.¹⁵ - Maintain quiet by lowering voices and keeping phone ringer volumes low or off. - Minimize/eliminate sounds of other species by choosing examination spaces located away from common areas (e.g., reception, treatment space). - Consider alternate spaces in the hospital to use as a separate cat ward. - Keep doors closed between wards and reception (and other potentially noisy spaces). - If renovating, install sound-buffering doors and walls.
Smell and Semiochemicals	- Have a scent-free hospital policy. Ask team members to refrain from wearing perfumes or other products with heavy fragrance during working hours. - Spray items with synthetic feline pheromones 30 minutes before use; add diffusers to spaces where cats will be cared for. - Choose low-odor cleaners and disinfectants that effectively eliminate infectious disease organisms. - Consider using dilute chlorhexidine instead of alcohol for venipuncture. Isopropyl alcohol has a strong smell during and after use and can linger on the cat's fur. - Empty garbage cans that contain odors from other patients, including feces, anal gland contents, urine, or vomit.
Touch	- Provide soft blankets or towels warmed with oat bags or in a towel warmer. - Although not ideal for humans, the cat's preferred temperature range is 30 °C to 38 °C (86 °F to 100.4 °F). Provide warmed spaces and bedding for the cat, and ensure that the room is not cold. - When practical, apply topical anesthetics before venipuncture or IV catheter placement. Apply the product to the skin, followed by placement of an occlusive dressing, 30 minutes in advance. - Use clippers with reduced vibration and noise; many practical options are available online at reasonable prices. - Reduce the need for repeated venipunctures by using blood collection systems that connect directly to vacutainers, allowing collection of blood directly into the appropriate collection tubes.



**TABLE 5 Ward Cage Dimensions
Determined by Hospital Stay¹**

	≤24 HOURS	>24 HOURS
Minimum floor space	432 in ² (e.g., 18 in × 24 in)	576 in ² (e.g., 24 in × 24 in)
Minimum height	21 in	22 in

Cage Contents

Unless being used for immediate perioperative care (sedation, recovery), the ideal cage includes a space to hide, a space to perch, and resources (e.g., water, food bowl(s), litter box, bedding) (**FIGURE 5**). Hide and perch options include shelving, the cat's carrier, sturdy cardboard boxes, small step stools, or other creative, easy-to-clean options. Resources should be placed as far apart as possible to reflect the domestic cat's preference of having these resources separated.¹⁶ Additional resources such as the cat's own toys or puzzle feeders may be included for longer stays, reflecting the cat's need to engage in predatory behavior.

Bedding should be located in the hiding space but may also be added to the perch. It should be thick enough to buffer the cat from the hard cage floor and might include bedding from home or layers of blankets or towels. Cats are not comfortable on a cage rack or on surfaces that either lack bedding or are covered only by thin layers (e.g., newspaper). When cleaning the cage, rather than removing all bedding, consider spot

cleaning only soiled areas to retain the cat's scent in the cat's new territory.

Patients that have been admitted for a urine sample often have their litter boxes and bedding removed so they have nowhere to empty their bladder. Instead, it is preferable to treat symptoms of cystitis by giving the patient appropriate analgesics to improve the cat's comfort and reduce the desire to void in the absence of a litter box.

SUMMARY

Cat Friendly interactions involve passive restraint, minimal handling, and promotion of engaging emotions. Cats do best when given a sense of control, which is achieved by allowing them to make choices during the veterinary visit. Even the smallest choices can improve the cat's emotions. Creating a Cat Friendly environment does not require expensive renovations but rather thoughtful, creative ways to adapt to cats' needs in ways that give them a sense of control and safety. **TVP**

References

1. Taylor S, St. Denis K, Collins S, et al. 2022 ISFM/AAFP cat friendly veterinary environment guidelines. *J Feline Med Surg.* 2022;24(11):1133-1163. doi:10.1177/1098612X221128763
2. Rodan I, Dowgray N, Carney HC, et al. 2022 AAFP/ISFM cat friendly veterinary interaction guidelines: approach and handling techniques. *J Feline Med Surg.* 2022;24(11):1093-1132. doi:10.1177/1098612X221128760

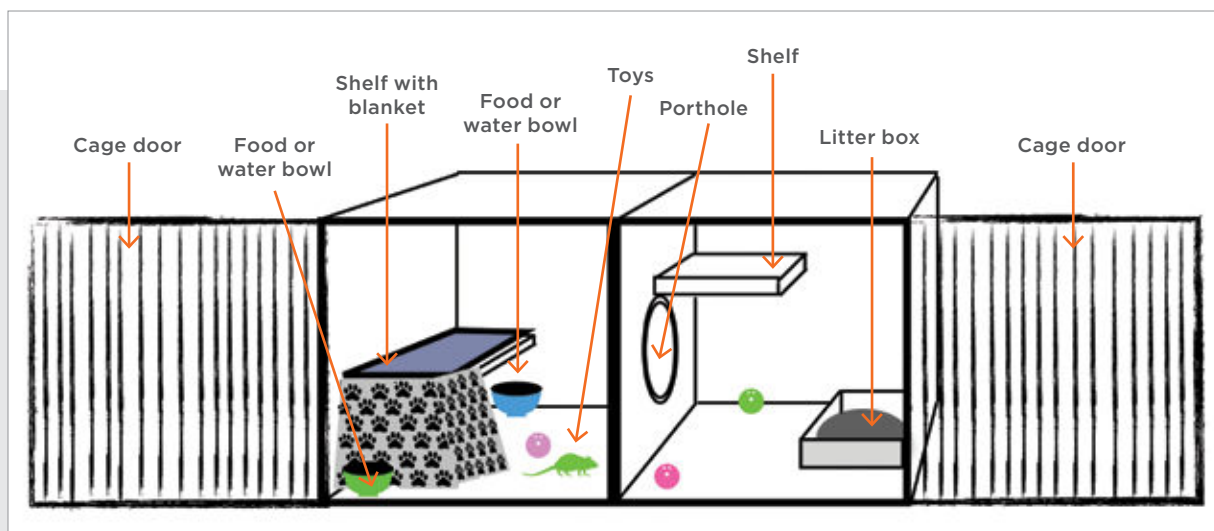


FIGURE 5. A Cat Friendly ward or intensive care unit cage. Inside the cage essential resources include water source, food bowl(s), litter box, and bedding. Ideally, the cat is provided with hiding and perching options, into which bedding can be incorporated. Different options will vary based on hospital layout and ward cage size and may include shelving in the cage, placing the cat's carrier in the cage, sturdy cardboard boxes, small step stools, or other creative options.



CYCLAVANCE™

(cyclosporine oral solution) USP MODIFIED
100 mg/mL

Brief Summary: Before using CYCLAVANCE™ (cyclosporine oral solution) USP MODIFIED consult the product insert, a summary of which follows:

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Indications: CYCLAVANCE is indicated for the control of atopic dermatitis in dogs weighing at least 4 lbs (1.8 kg) body weight.

Dosing Instructions: Always Provide the Instructions for Assembling the Dispensing System and Preparing a Dose of CYCLAVANCE and the Information for Dog Owners with the prescription (see product insert).

The initial dose of CYCLAVANCE is 5 mg/kg/day as a single daily dose for 30 days. Following this initial daily treatment period, the dose of CYCLAVANCE may be tapered by decreasing the frequency of dosing to every other day or twice weekly, until a minimum frequency is reached which will maintain the desired therapeutic effect.

CYCLAVANCE should be given at least one hour before or two hours after a meal. If a dose is missed, the next dose should be administered (without doubling) as soon as possible but dosing should be no more frequent than once daily.

The dispensing system for the 15 mL vial size includes a 1 mL oral dosing syringe graduated in 0.05 mL increments. To dose the dog, administer 0.05 mL of CYCLAVANCE per 2.2 lbs of body weight. The dispensing system for the 50 mL vial size includes both a 1 mL oral dosing syringe graduated in 0.05 mL increments, and a 3 mL oral dosing syringe graduated in 0.1 mL increments.

To dose the dog, administer 0.1 mL of CYCLAVANCE per 4.4 lbs of body weight. **Do not rinse or clean the oral dosing syringe between uses.** (See Instructions for Assembling the Dispensing System and Preparing a Dose of CYCLAVANCE.)

Contraindications: CYCLAVANCE is contraindicated for use in dogs with a history of neoplasia. Do not use in dogs with a hypersensitivity to cyclosporine.

WARNINGS: CYCLAVANCE is a systemic immunosuppressant that may increase the susceptibility to infection and the development of neoplasia.

HUMAN WARNINGS: Not for human use. Keep this and all drugs out of reach of children. **For use only in dogs.** **Special precautions to be taken when administering CYCLAVANCE in dogs:** Do not eat, drink, smoke, or use smokeless tobacco while handling CYCLAVANCE. Wear gloves during administration. **Wash hands after administration.** In case of accidental ingestion, seek medical advice immediately and provide the package insert or the label to the physician.

PRECAUTIONS: The safety and effectiveness of cyclosporine has not been established in dogs less than 6 months of age or less than 4 lbs body weight. CYCLAVANCE is not for use in breeding dogs, pregnant or lactating bitches. As with any immunomodulation regimen, exacerbation of sub-clinical neoplastic and infectious conditions may occur. Gastrointestinal problems and gingival hyperplasia may occur at the initial recommended dose (See *Animal Safety in the product insert*).

CYCLAVANCE may cause elevated levels of serum glucose, and should be used with caution in cases with diabetes mellitus. If signs of diabetes mellitus develop following the use of CYCLAVANCE, consideration should be given to tapering or discontinuing the dose.

CYCLAVANCE should be used with caution with drugs that affect the P-450 enzyme system. Simultaneous administration of CYCLAVANCE with drugs that suppress the P-450 enzyme system, such as azoles (e.g. ketoconazole), may lead to increased plasma levels of cyclosporine.

Since the effect of cyclosporine use on dogs with compromised renal function has not been studied, CYCLAVANCE should be used with caution in dogs with renal insufficiency.

There have been reports of convulsions in human adult and pediatric patients receiving cyclosporine, particularly in combination with high dose methylprednisolone (See *Animal Safety in the product insert*).

Killed vaccines are recommended for dogs receiving CYCLAVANCE because the impact of cyclosporine on the immune response to modified live vaccines is unknown (See *Animal Safety in the product insert*).

Adverse Reactions: Vomiting and diarrhea were the most common adverse reactions occurring during the field study. In most cases, signs spontaneously resolved with continued dosing. In other cases, temporary dose modifications (brief interruption in dosing, divided dosing, or administration with a small amount of food) were employed to resolve signs.

Persistent otitis externa, urinary tract infections, anorexia, gingival hyperplasia, lymphadenopathy and lethargy were the next most frequent adverse events observed. Gingival hyperplasia regressed with dose tapering.

Otitis externa, allergic otitis, or pinna erythema, with or without exudates, commonly accompanies atopy. Many dogs entered the study with otitis externa, which did not resolve without otic treatment. New cases of otitis externa, allergic otitis, or pinna erythema developed while dogs were receiving cyclosporine. However, the incidence rate was lower with cyclosporine compared to placebo. A change in the dose frequency was not necessary when new cases occurred.

Number of Dogs Displaying Each Clinical Observation in the Field Study

Clinical Sign	% out of 265
Vomiting	30.9%
Diarrhea	20.0%
Persistent Otitis Externa	6.8%
Urinary Tract Infection	3.8%
Anorexia	3.0%
Lethargy	2.3%
Gingival Hyperplasia	2.3%
Lymphadenopathy	2.3%

Clinical Pathology Changes: During the study, some dogs experienced changes in clinical chemistry parameters while receiving cyclosporine, as described in the following table:

Clinical Chemistry	% Affected (out of 265)
Elevated Creatinine	7.8%
Hyperglobulinemia	6.4%
Hyperphosphatemia	5.3%
Hyperproteinemia	3.4%
Hypercholesterolemia	2.6%
Hypoalbuminemia	2.3%
Hypocalcemia	2.3%
Elevated BUN	2.3%

Effectiveness: See full prescribing information for details on effectiveness.

Contact Information: To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet, contact Virbac AH, Inc. at 1-800-338-3659.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or <http://www.fda.gov/reportanimalae>.

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