



Q&A: EMERGING TOPICS

Triaging Feline House Soiling Using Telemedicine

Marianne Manning, RVT, LVT, KPA CTP, VTS (Behavior)
The Behavior Clinic, Olmsted Falls, Ohio

Abstract

Feline house soiling is defined as urination and/or defecation outside of a litter box, and it is one of the most common behavior issues among cats. Ruling out medical causes for this behavior is essential. Telemedicine can be used to virtually enter a cat's home, making it easier for the veterinary team to gather information, make recommendations, and implement a plan to improve litter box problems and support caregivers.



Take-Home Points

- Feline house soiling can be indicative of a medical issue.
- A physical examination and laboratory diagnostics can rule out several medical issues for which house soiling is a clinical sign.
- A thorough medical history can elucidate ways to prevent and manage litter box problems.
- Telemedicine enables a veterinary nurse to see a cat's body language in their natural setting.
- By identifying behavior and environmental stressors, actionable steps can be performed to improve litter box problems.

Feline house soiling is defined as urination and/or defecation outside of a litter box. A cat may eliminate outside of a litter box for a multitude of reasons, and many factors affect a cat's litter box habits. Determining the specific reason for this behavior can be difficult. Thus, feline house soiling is the No. 1 behavior reason that cats are relinquished to shelters or euthanized.¹ Fortunately, the veterinary team can help determine the probable cause.²

Q Why is house soiling a problem among cats?

House soiling is a clinical sign of a larger problem for a cat; it can indicate that a cat has a medical concern or is having difficulty coping with a stressor. Cats are excellent at hiding illness and disease; house soiling may be the only indication that a cat is unwell or stressed. In addition, repeated cleanings—and the potential for destroyed items in the home—are extremely taxing and stressful for caregivers. Feelings of helplessness and resentment toward a cat can build, and the human–animal bond can deteriorate, putting the cat at risk for losing their home or life.

Q What causes cats to eliminate outside of a litter box?

The 2 forms of house soiling are urination and defecation.

Urination is the more common form and can indicate a urinary tract issue such as urinary tract infection, urethral obstruction, bladder stone, and/or feline idiopathic cystitis. Urine house soiling can also be a symptom of disease, the most common being diabetes, kidney disease, joint pain/osteoarthritis, and hyperthyroidism.

Defecation is the lesser common form and can indicate a medical issue.³ Both hard and loose stool can be suggestive of a gastrointestinal issue such as constipation or irritable bowel disease. A cat-specific fecal scoring chart can be sent to a caregiver in advance or shown during a telemedicine appointment to determine if a cat's feces is within normal limits.⁴

Joint pain or osteoarthritis can make it difficult for a cat to enter a litter box, representing a potential reason for both urine and defecation house soiling.⁵

Behavior and environmental issues should be investigated as potential causes of house soiling. Behavior reasons for house soiling include fear, stress, anxiety, marking, and tension between cats in the household. Cats may use feces to mark their territory, depositing their feces in a visible, high-traffic location to communicate with other cats (middening).⁶ Environmental reasons for house soiling include a lack of appropriate options for their natural behaviors and/or a dislike of their litter box.

Q Before a telemedicine appointment, how can some causes of house soiling be ruled out?

A physical examination by a veterinarian and laboratory diagnostics are imperative. A CBC, chemistry with SDMA (symmetric dimethylarginine, an early indicator of kidney diseases), thyroid level (T₄), urinalysis, and fecal testing serve as an initial database with the possibility of additional tests (e.g., urine culture and sensitivity, NTproBNP [(N-terminal pro-B-type natriuretic peptide, a biomarker for cardiac stress)]).^{1,7,8} After all, any medical condition can make a cat unwell enough to house soil.



Q What is required for a telemedicine appointment?

The veterinary nurse and caregiver need access to a computer or smartphone that is equipped with a camera, microphone, and video conferencing platform (e.g., Zoom, Google Meet, FaceTime) as well as access to Wi-Fi. Ideally, the veterinary nurse is in a quiet area, either an office or at home, and able to give the caregiver their complete attention without interruption. The veterinary team must determine the necessary amount of time and price for these appointments. A telemedicine appointment should be scheduled like an in-clinic veterinary nurse appointment, likely requiring 30 minutes to 1 hour.

A veterinary nurse with an interest in feline behavior, or another veterinary professional with specific training/education in feline behavior and house soiling, can provide a telemedicine consult for litter box problems. A veterinary nurse is ideal for triaging house soiling because they know how to collect a detailed history as well as possible medical concerns and diagnostics to recommend.

Q Why does telemedicine provide an optimal approach for house soiling?

Telemedicine dramatically improves the efficiency of communication between a veterinary nurse and caregiver. A caregiver can walk around the home and use a laptop, tablet, or smartphone to show the locations of litter boxes, other resources, and house soiling. Visualization of the litter boxes, including the types and locations of the litter boxes, may be most pertinent. Another benefit is seeing the cat's, or cats', body language and how they act in their home environment. While virtually traveling through a caregiver's home, a veterinary nurse can point out signs of stress from the cat(s) and issues with litter boxes.

Q How does triaging house soiling via telemedicine work?

To troubleshoot litter box problems, a list of questions pertaining to the home environment, individual cat, and litter boxes is necessary.⁹ This list can be sent to the caregiver before the appointment or asked during the appointment.

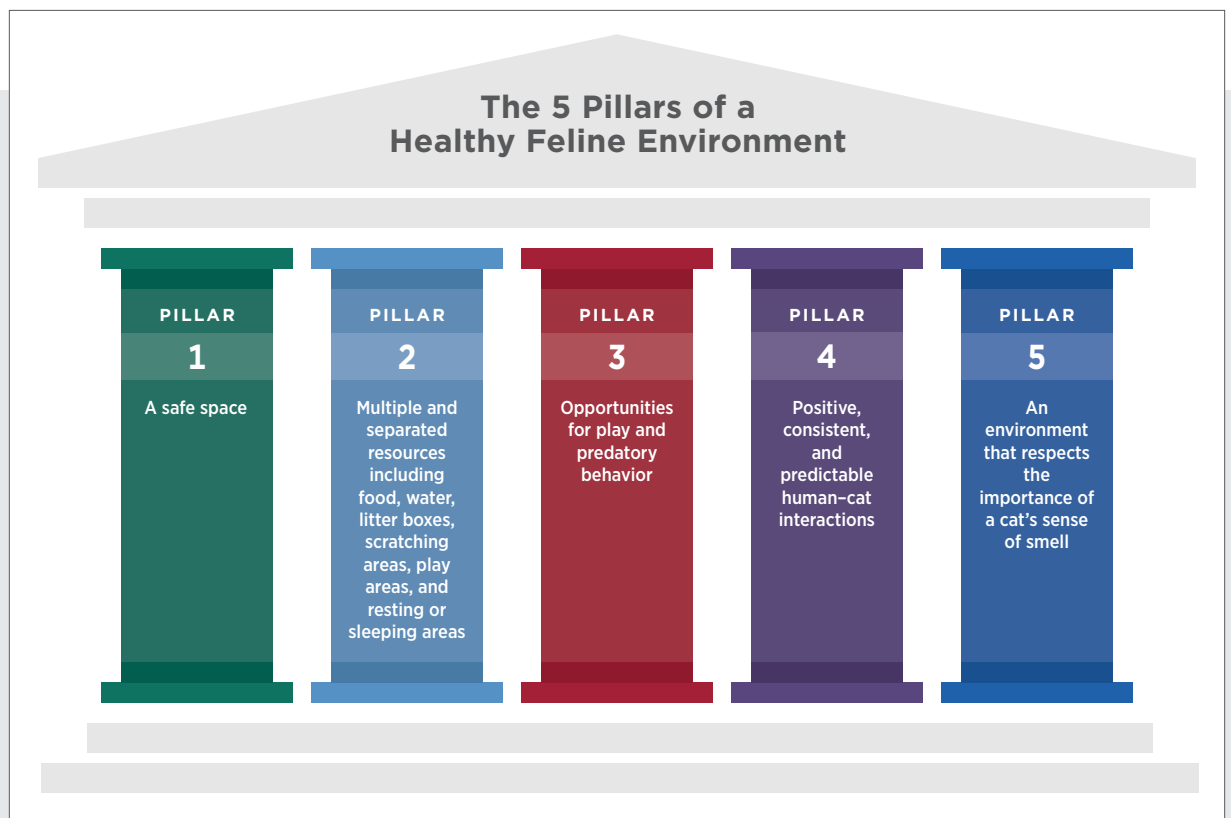


FIGURE 1. The 5 Pillars of a Healthy Feline Environment^{1,2}



This list of questions should include but is not limited to the following:

- Tell me about any previously diagnosed health issues with your cat.
- What is your cat's overall demeanor?
- When the cat is eliminating, either inside or outside of a litter box, what is your cat's body language (i.e., identifying pain and differentiating urinating from spraying)?
- Tell me about your cat's urination and defecation location preferences.
- Where are you finding urine and/or stool (e.g., types of surfaces)?
- How long have you noticed this behavior or issue?
- How frequently does elimination outside of a litter box occur (i.e., number of times per day, per week, per month)?
- What is the size/amount of urination outside of a litter box (e.g., size of a golf ball, baseball)?
- When do you notice your cat using a litter box?
- What products are you using to clean soiled areas?
- Tell me about the other pets in the home.
- What is the cat's perceived relationship with the other pets?
- Have you seen this specific cat eliminate outside of a litter box (i.e., ensuring that the correct cat has been identified)?

Litter Box Questions:

- How many litter boxes are in the home, and where are they located?
- What are the sizes and types of litter boxes?
- What brand or type of litter is being used?
- Is the litter scented or unscented?
- How often are the litter boxes scooped?
- How often are the litter boxes emptied and thoroughly cleaned?
- What products are being used to clean the litter boxes?

A map of the house that highlights the soiled areas, as well as the locations of resources (e.g., food, water, litter boxes), is a helpful visual if the caregiver is not at home during the appointment.



What action steps can be recommended without a diagnosis?

A caregiver should begin keeping a written or computerized log of their cat's eliminations—noting the date/time it happens or is found, location, and size (as well as fecal score if feces). Noting when

Into Practice

- ✓ Develop a plan with the necessary staff members (e.g., managers, medical directors, practice owners) to begin offering telemedicine appointments.
- ✓ Establish a list of questions for caregivers about litter box problems.
- ✓ Refer to the Feline Veterinary Medical Association practice guidelines and consensus statements to learn more about house soiling, environmental needs, and intercat tension.

eliminations occur in a litter box and which litter box can also be helpful.⁹ Keeping track of eliminations is crucial to determining if the problem is worsening, improving, or staying the same after treatment and/or action steps are implemented.

The prevention and minimization of house soiling likely require scooping litter boxes more often and scanning the home with an ultraviolet light to detect soiled areas. An enzymatic cleaner (e.g., Anti-Icky-Poo, Nature's Miracle) is essential to clean a soiled area and break down smells.⁵ Once the area is dry, a commercial cleaner can be used to address any stains, if necessary.

Also, if a sufficient number of litter boxes is not available to accommodate the number of cats in the household, additional litter boxes should be added, preferably in locations where house soiling is occurring. Tension between cats can cause or exacerbate house soiling. Thus, identifying signs of tension and confirming that there are enough resources in the home for the number of cats are imperative to preventing and managing tension that contributes to house soiling.

Overall, reviewing the 5 pillars of a healthy feline environment with a caregiver and ensuring that each pillar is being supplied can be a productive, beneficial component of a telemedicine consult for house soiling (**FIGURE 1**).^{1,2}

SUMMARY

Feline house soiling can be a major problem for caregivers, and telemedicine is a means of providing much needed support and guidance. The virtual presence of a dedicated veterinary nurse enables caregivers to express their issues and expedite care. A



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veterinary nurse can gather a detailed history, triage litter box issues, provide recommendations for prevention and management, and implement a plan. By providing this direct guidance and support to a caregiver, the likelihood of compliance increases. An improvement in house soiling behavior can restore the human–animal bond and ultimately keep a cat alive and in their home. **TVN**

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Marianne Manning

Marianne is a licensed veterinary technician in Ohio and Georgia with more than 20 years of experience. She is certified in Fear Free and Low-Stress Handling and serves as a Cat Friendly Veterinary Professional and Certified Training Partner for the Karen Pryor Academy. In 2023, she earned VTS certification in behavior. She is now a manager at The Behavior Clinic, a behavior-only specialty clinic in Ohio. She has written for veterinary and animal training publications and lectured at local veterinary hospitals and conferences. Marianne enjoys all things pertaining to feline behavior.

Emeprev®
(maropitant citrate)
Injectable Solution

Antiemetic

For subcutaneous or intravenous injection in dogs and cats

Brief Summary (For Full Prescribing Information, see package insert)

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

DESCRIPTION: Maropitant is a neurokinin (NK1) receptor antagonist that blocks the pharmacological action of substance P in the central nervous system (CNS).

INDICATIONS: Dogs: Emeprev (maropitant citrate) Injectable Solution is indicated for the prevention and treatment of acute vomiting in dogs.

Cats: Emeprev (maropitant citrate) Injectable Solution is indicated for the treatment of vomiting in cats.

WARNINGS: Not for use in humans. Keep out of reach of children. In case of accidental injection or exposure, seek medical advice. Topical exposure may elicit localized allergic skin reactions in some individuals. Repeated or prolonged exposure may lead to skin sensitization. In case of accidental skin exposure, wash with soap and water. Emeprev Injectable Solution is also an ocular irritant. In case of accidental eye exposure, flush with water for 15 minutes and seek medical attention. In puppies younger than 11 weeks of age, histological evidence of bone marrow hypocellularity was observed at higher frequency and greater severity in puppies treated with maropitant citrate compared to control puppies. In puppies 16 weeks and older, bone marrow hypocellularity was not observed.

PRECAUTIONS: The safe use of Emeprev Injectable Solution has not been evaluated in dogs or cats with gastrointestinal obstruction or that have ingested toxins. Use with caution in patients with hepatic dysfunction because Emeprev Injectable Solution is metabolized by CYP3A, CYP2D15 (dogs) and CYP1A (cats) enzymes. The influence of concomitant drugs that may inhibit the metabolism of Emeprev Injectable Solution has not been evaluated. Emeprev Injectable Solution is highly protein bound. Use with caution with other medications that are highly protein bound. The concomitant use of Emeprev Injectable Solution with other protein bound drugs has not been studied in dogs or cats. Commonly used protein bound drugs include NSAIDs, cardiac, anticonvulsant, and behavioral medications. Drug compatibility should be monitored in patients requiring adjunctive therapy. The safe use of Emeprev Injectable Solution has not been evaluated in dogs or cats used for breeding, or in pregnant or lactating bitches or queens.

ADVERSE REACTIONS: DOGS: In a US field study for the prevention and treatment of vomiting associated with administration of cisplatin for cancer chemotherapy, the following adverse reactions were reported in 77 dogs treated with maropitant citrate injectable solution at 1 mg/kg subcutaneously or 41 dogs treated with placebo:

Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=41)		maropitant citrate (n=77)	
	# dogs	% occur	# dogs	% occur
Diarrhea	1	2.4	6	7.8
Anorexia	0	0	4	5.2
Injection site reaction (swelling, pain upon injection)	0	0	3	4
Lethargy	1	2.4	2	2.6

The following adverse reactions were reported during the course of a US field study for the prevention and treatment of acute vomiting in dogs treated with 1 mg/kg maropitant citrate injectable solution subcutaneously and/or maropitant citrate tablets at a minimum of 2 mg/kg orally once daily for up to 5 consecutive days:

Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=69)		maropitant citrate (n=206)	
	# dogs	% occur	# dogs	% occur
Death during study	4	5.8	10	4.9
Euthanized during study	0	0	2	1
Diarrhea	6	8.7	8	3.9
Hematochezia/bloody stool	5	7.2	4	1.9
Anorexia	2	2.9	3	1.5
Otitis/Otorrhea	0	0	3	1.5
Endotoxemic Shock	1	1.4	2	1
Hematuria	0	0	2	1
Excoriation	0	0	2	1

Other clinical signs were reported but were <0.5% of dogs.

Adverse reactions seen in a European field study included ataxia, lethargy and injection site soreness in one dog treated with maropitant citrate injectable solution.

Post-Approval Experience (Rev. 2015)

The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data. The following adverse events reported for dogs are listed in decreasing order of reporting frequency for maropitant citrate injectable solution:

Pain/vocalization upon injection, depression/lethargy, anorexia, anaphylaxis/anaphylactoid reactions (including swelling of the head/face), ataxia, convulsions, hypersalivation, tremors, fever, dyspnea, collapse/loss of consciousness, recumbency, injection site reactions (swelling, inflammation) and sedation. Cases of death (including euthanasia) have been reported.

CATS: The following adverse reactions were reported during the course of a US field study for the treatment of vomiting in cats treated with 1 mg/kg maropitant citrate injectable solution subcutaneously once daily for up to five consecutive days:

Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=62)		maropitant citrate (n=133)	
	# cats	% occur	# cats	% occur
Moderate Response to Injection ^{*†}	1	1.6	30	22.6
Significant Response to Injection ^{*†}	1	1.6	15	11.3
Fever/Pyrexia	2	3.2	2	1.5
Dehydration	0	0	3	2.3
Lethargy	0	0	2	1.5
Anorexia	0	0	1	0.8
Hematuria	0	0	1	0.8
Hypersalivation	0	0	1	0.8
Injection site swelling	1	1.6	0	0

* The clinician observed and graded each cat's response to injection.

† Cat objected to the injection by retreating and vocalizing

‡ Cat objected to the injection by retreating, hissing, scratching, and vocalization

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Depression/lethargy, anorexia, hypersalivation, pain/vocalization upon injection, dyspnea, ataxia, fever, recumbency, vomiting, panting, convulsion, and muscle tremor. Cases of death (including euthanasia) have been reported.

CONTACT INFORMATION: To report suspected adverse drug events, for technical assistance, or to obtain a copy of the Safety Data Sheet, contact Dechra Veterinary Products at (866) 933-2472. 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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