

## **FELINE HOUSE SOILING: URINATING/DEFECATING OUTSIDE THE LITTER BOX AND URINE MARKING**

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### **Background**

Is this behavior really “Inappropriate”? Ancestral cats did not use plastic boxes filled with pelleted clay material to eliminate in. Nor did they eliminate in caves... The behavior we’re talking about is normal for cats but objectionable to their human caretakers. It is a conservative estimate that at least 10% of pet cats at some time exhibit an elimination behavior problem. The incidence probability increases with number of cats in the household. Inappropriate elimination is associated with the highest risk of relinquishment of pet cats to an animal shelter.

### **Elimination vs. Marking**

With **ELIMINATION**, the cat stops using the box and uses target areas of “suitable texture” to eliminate (urination ± defecation). There may be signs of aversion to box and/or litter. The posture is usually squatting and there is a large amount of urine involved. With **MARKING**, the cat continues to eliminate in the litter box. The target areas are those with “behavioral significance”. The posture is usually standing with the tail up and twitching. The urine involved is a small amount – not a normal voided amount. It’s important to note that by the time the owner presents the problem to you, it may be a combination of both inappropriate elimination and marking – the cat deposits large amount of urine on vertical surfaces.

**Medical Causes** for inappropriate elimination include any disease causing polyuria, dysuria, diarrhea, or constipation; neurological diseases; and any condition causing pain or discomfort while urinating or defecating (such as a declaw, tendonectomy). Any change in litter post-surgery can be the cause. In elderly cats arthritis, any sight or olfactory impairment, cognitive dysfunction and hyperthyroidism should be considered.

**Physical Causes** need to be addressed. Does the cat need a haircut? Long hair in the perianal/perineal areas and/or in between the toes may change the tactile sensation.

**Behavioral History** is very important. Who? What? When? Where? Why? How?

**Who?** In a multicat household there may be more than one culprit. Confining one of the cats *may* determine who the eliminator is, but if there’s an underlying social issue, the confinement may not help. For example, the confined cat may eliminate normally because it is no longer being intimidated. Use of fluorescein (PO or SQ) can be used for urination; crayons for defecation. Be sure to rule out other animals in the household, even the dog!!

**What?** Urine, feces, both? Is there any marking component?

**When?** How long has the problem been going on? When does it occur? Is the owner away? Is there any known inciting event? It is important to remember that the initial cause may no longer exist. Is the cat ever “good”? - When confined? When the litter box is first cleaned?

**Where?** It’s important to see a floor plan of the house showing the location of food, water, litter boxes, and of the soiled areas. If the “accident” is close to the litter box it tells you that the cat can get to the litter box but doesn’t want to go in. This concentrates the effort on finding a bigger and better litter box. If the “accident” is far from the litter box, there may be a reason... Another cat waiting to attack? A scary child? A dog waiting for the “tootsie roll” to drop? This information concentrates the effort on providing at least one additional litter box in a different location and in dealing with the social dynamics of the household.

**Why?** With elimination, it's because the cat doesn't like the "toilet" provided or prefers another. With marking there is an underlying anxiety component. In cats with Separation Anxiety, inappropriate urination is the #1 symptom (Schwartz, 2002). The owner's bed is a popular spot. It's important to get information from the owner regarding the litter boxes: How many? How old are they? Where are they located? Type of box – is it open or covered? Type of litter - is it scented or unscented? Is a liner used? The hygiene considerations are important. How often: Are the boxes scooped? Is the litter changed? Is the box washed? And with what?

**How?** The cat's behavior in the box can be important. Is there digging, covering? Is there a reluctance to get/stay in? Is there vocalization? Does the cat run out when it's finished? Does the cat stand on the side of the box? Does it run into the box when the litter is fresh?

**Elimination** – Differentials include substrate aversion, substrate preference, litter box aversion, location aversion, and location preference.

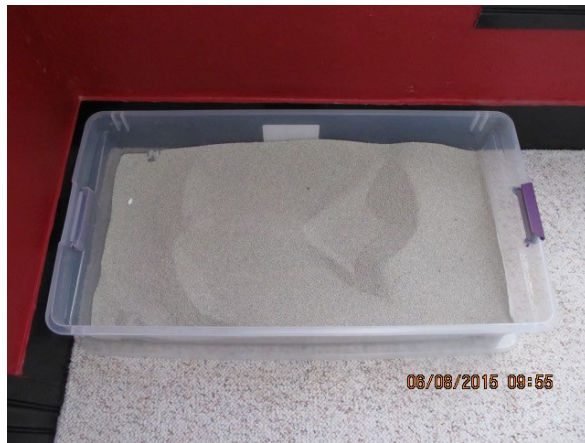
With **Substrate/Box Aversion** the symptoms include perching on the edge of the box, minimal or digging/covering, shaking the paws and/or a hurried exit. Causes include substrate change, box/litter type, poor hygiene, and/or a possible history of a painful event associated with current litter and/or box.

With **Substrate Preference** the cat prefers a specific texture such as carpet, wood floor, linoleum. This could be the result of early learning. There is a multitude of substrates available – but studies show that cats prefer a finely textured clay litter. However, there are individual preferences for texture, granularity, and coarseness. The important thing is to provide a substrate that cat "likes". You may need to be creative and try substrates such as potting soil, newspaper, pee pads, diapers, carpet swatches, and towels. In general, make sure that there are plenty of boxes – the # of cats + one more. The box can be open or covered, but make sure that the cat has easy access into and easy egress out of the box without having to experience an unpleasant encounter with another cat or with a "hungry" dog... It is important to keep the litter box clean by scooping it at least once a day. The litter should be completely changed and the box washed with mild soap and water every 1-2 weeks. It's also a good idea to place the litter box in the cat's core area – where he spends most of his time. Ideally, it should be placed in an area that's quiet and well-lit, away from the food and water.

**Location Aversion/Preference** is not common. It may not be discovered until the litter box is moved to another location for some reason and the cat continues to eliminate in the former location. There may be anxiety component such as Separation Anxiety – the cat eliminates on the bed while the owner is away, or upon return.

**Treatment** is highly individualized and consists primarily of environmental modification. The goal is to clean the soiled areas and make them aversive (using upside-down plastic carpet runners with the "nubby" side up, aluminum foil, motion detectors, etc.), and to make the "toilet area" desirable. Provide the cat with a "Litter Box Cafeteria" – new LARGE boxes (open, covered), different litter types, in different locations. The particulars vary in each case and are dependent on the presentation. It is important for the owner to keep a log of which box or boxes the cat uses and also what, if any, inappropriate locations are still being targeted. Any next steps are determined by what the cat does. Most cases of inappropriate elimination are treated and resolved with environmental modification alone and medication is not needed.

Below are examples of large plastic storage boxes. The low-sided option will be good for most cats: –



The high-sided option is especially ideal if the cat in question is a “high-urinator”. In any case, the bigger the litter box, the better!



**Urine Marking/Spraying** is normal feline communication. However, the message of the communication is not entirely understood. Spaying/neutering decreases the incidence of marking by 89% (Hart&Barrett, 1973). Denying access to windows may help, as may motion detectors (CatStop, Scarecrow). Playing interactively is recommended. Feliway™ spray or diffuser may also help. It is an “alleged” synthetic analogue of feline facial pheromone used “To calm the cat in an unknown or stressful environment...” Pharmacological treatment is usually warranted and its use is based on: the cause of the problem (anxiety component), the health of the cat, pertinent underlying social interactions, owner compliance (can the owner medicate the cat 1-2x/day?), and expense. It is important to remember that all use of drugs for elimination and/or marking problems is “OFF-LABEL” and that you must obtain the owner’s permission to treat in writing. The “Permission to Treat” form also provides the owner with an explanation of what the drug does as well as a list of possible side effects. Pharmacological treatment options include the serotonin partial agonists, such as buspirone (Buspar®). Avoid use with aggressive cat as it can make them more assertive. However, its use is great in the “victim”. Tricyclic antidepressants, such as amitriptyline (Elavil®), clomipramine (Clomicalm™, Anafranil®), may be effective. It is important to realize that these drugs do have side-effects such as sedation and other anticholinergic effects. The **Selective Serotonin Reuptake Inhibitors**, such as fluoxetine (Prozac®, Reconcile™) and paroxetine (Paxil®) have been shown to be effective in marking cats. Side-effects with this drug class include inappetence and sedation. Less used drugs include the anxiolytics, such as the benzodiazepine Diazepam (Valium®) and the synthetic progestins medroxyprogesterone acetate (Depo-Provera®) and megestrol acetate (Ovaban®, Megace®). Hepatotoxicity has been reported in cats given diazepam, and use of the synthetic progestins has been associated with mammary neoplasia and bone marrow suppression. Consider their use only as a last resort, and/or in refractory cases.

**Other Alternatives** include various cat enclosures where the cat is “safe” but still has more access to the outdoors. Cat fences can keep your cat safe inside the fenced yard and stray cats out. See Boarding the cat at your clinic can also give the client time to deal with the problem – start the cat on medication, etc. The goal is to give the client an alternative to euthanasia.

**For more information on this topic, a good and comprehensive resource is the AAFP/ISFM Guidelines for Diagnosing and Solving House Soiling Behavior in Cats – 2014.**