

FELINE HOUSE-SOILING

House-soiling in cats, also called feline inappropriate elimination, is the most common behavioral complaint of cat owners. Problem behaviors can be urine and/or stool deposited outside of the litter box, or marking behaviors. When cats urinate on vertical surfaces, it is known as spraying. Usually the cat backs up to a vertical surface, raises their tail, treads with their back feet, the tail may quiver and a stream of urine is directed backwards. Marking includes spraying urine on vertical locations but on occasion may be presented as elimination of small amounts on horizontal surfaces. Rarely, if ever is stool used for marking. In this handout we will discuss the cat that is house-soiling. For marking behavior see our separate handout 'Marking behaviors in cats'

Could there be a medical reason that my cat is house-soiling?

Medical diseases of the urinary tract can cause inappropriate elimination. There are many such conditions, including stones and crystal formation in the bladder, bacterial infections, and a group of inflammatory diseases of the bladder and urinary tract of unknown origin that cause pain and an increased urgency to urinate. Diseases of the kidneys and liver can cause the cat to drink more and urinate more frequently. In addition, age related cognitive (brain function) decline and endocrine disorders such as hyperthyroidism and diabetes, might lead to changes in elimination habits including house-soiling. Medical problems that lead to a difficulty or discomfort in passing stools, poor control or an increased frequency of defecation could all contribute to house-soiling with stools. Colitis, constipation, and anal sac diseases, are just a few of the medical problems that



need to be ruled out when diagnosing the cause of inappropriate defecation. Another consideration is the pet's mobility and sensory function. Medical conditions affecting the nerves, muscles, or joints, could lead to enough discomfort, stiffness or weakness that the cat may not be able to get to the litterbox, climb into the litterbox, or get into a comfortable position for elimination.

In summary, if elimination is associated with pain or discomfort, or if access to the litterbox is difficult or uncomfortable the cat may begin to eliminate outside of the box. In addition, those cats with increased frequency of elimination (especially if the litter box is not cleaned more frequently) and those with decreased control may begin to soil the house. A complete physical examination, urinalysis and in some cases additional diagnostic tests such as blood tests, radiographs or a urine culture, will be needed to rule out medical problems that could be causing or contributing to the cat's elimination problem. Some problems may be transient or recurrent so that repeated tests may be needed to diagnose the problem. For some problems that cannot be entirely resolved, adjustments may need to be made to the box or its location to accommodate the needs of the cat. For example, moving the box to an area that is more easily accessible, improving lighting or providing a larger box with lower sides, might be necessary for a cat that has arthritis, declining sensory function or cognitive decline.

Once a cat has persistently eliminated outside of the litter box for medical reasons, the cat may learn to eliminate in the wrong location. Therefore, even if the medical problem has been resolved, behavioral therapy may be needed to re-establish regular use of the box.

What could the problem be if it is not medical?

Diagnostic possibilities for elimination problems in cats include litter, litter box, and location aversions, and substrate and location preferences. Frustration or stress might also influence feline elimination behavior. Keep in mind that the initiating cause of house-soiling may have been medical or a change in the environment and may still be ongoing or may have already been resolved. However, once the cat has learned to eliminate somewhere other than the litter box, the problem may be maintained. When frustration, stress, anxiety, or marking are suspected to be the cause, drug therapy and behavior modification techniques may be effective. See our separate handout on 'Marking behaviors in cats' for treatment.

How do we determine the behavioral cause?

When all medical problems have been treated or ruled out and the house-soiling persists, a complete and comprehensive behavioral history will be necessary in order to establish a diagnosis and treatment plan. This includes information about the home environment, litter box type and litter used, litter box maintenance and placement, and the onset, frequency, duration and progression of problem elimination behaviors. Other factors to note include new pets in the household, any household changes that might have occurred



around the time the problem began, and any patterns to the elimination such as the time of day, particular days of the week, or seasonal variations. Relationships between the soiling cat and other animals and people in the home need to be examined. The number and placement of litter boxes is extremely important in multi-cat households and if inappropriate or undesirable for one or more of the cats, may contribute to the house-soiling.

Other information required is whether the cat is using the litter box at all, and the location of inappropriate elimination including types of surface, whether on horizontal or vertical surfaces, and whether it is urine, stools or both.

How do I determine which cat is eliminating when there is more than one cat?

When there are multiple cats in the home, it may be difficult to determine who is actually soiling. Confinement of one or more cats may be necessary to discover who is not using the litter box. However, if social conflicts between cats contribute to the problem, separating cats may make the problem diminish or stop. A fluorescent dye can be administered to one cat, and the soiled areas can then be evaluated with a "black" light to determine if that is the cat that is house-soiling. However, results are not always consistent and the dye may stain some carpets. Therefore, the best solution may be to place a video camera in the area where the soiling occurs. For stool elimination a small amount of a non-toxic colored crayon can be chopped and mixed into the food of one of the cats.

What can I try first?

Although correcting house-soiling can take a great deal of time and effort and may require a fairly extensive behavioral assessment, there are cases when a few simple suggestions might do the trick. You can start with determining if you made a change to the litter or litter area around the time the problem started and switch back to the preferred litter or site. Alternately try a different litter such as one that is clumping. Cleaning the soiled spots with odor eliminators may help prevent re-soiling. Insure that there is one more litter box than the number of cats in the home, in at least two different locations. Consider putting one of the boxes near to the area where the soiling occurs. Clean the boxes daily and change the boxes weekly. If after a couple of weeks the problem has not resolved, then a more intense evaluation of the factors that might be causing the problem will be needed and a variety of treatment protocols may need to be utilized.

What are the general treatments for elimination problems?

Treatment focuses on re-establishing regular litter box usage. The litter material, box and location may need to be made more appealing (or remove those factors that are reducing the appeal). The cat will need to be prevented or deterred from returning to the soiled areas, and if there is an anxiety or marking component drugs may be useful. Litter trials (using two or more litter types), location trials (using two or more locations) and litter box trials (using two or more different box types) may be useful for determining the cat's preferences. Commonly the cat will need to be confined when it can't be supervised. The first step however may be to review the basics of litter box training (See our handout on 'House-training – using the litter box' for details).

What factors should I look at to correct this problem?

Two areas that need to be addressed are litter box maintenance and litter box location. Litter box maintenance refers to how the box is cleaned. For some cats, it is necessary to keep the litter box scrupulously clean. This means cleaning the box at least once a day and removing stool and moist areas of urine. Litter boxes should be totally emptied and cleaned approximately once a week. Avoid strong detergents or cleaners that might leave a residual odor since this may add to the aversion. Clumping litters seem to be preferred by a majority of (but certainly not all) cats. It may be easier to keep clean since the waste material can be scooped at least once a day, and the entire box may only need to be changed and cleaned every two to four weeks. However, remember to refill any scooped material to maintain the level of litter. Some clumping litters produce very firm clumps that are less likely to break apart (and may not be flushable). These litters might be considered to maintain even greater cleanliness. There is even a litter box that is self-cleaning after each litter use. While some cats seem to appreciate this level of cleanliness, there are others who may avoid the new box or the electric cleaning mechanism.

The choice of litter material is important. Some cats prefer a plain clay litter material without any odor control matter added. Other cats may prefer fine clay litter materials that clump and allow for frequent, easy litter box cleaning. A litter preference test can help to determine which type your cat favors (discussed below).

If the same litter box has been used for several years it may hold a residual odor. Discard the old one and obtain a new one. Another factor that may need to be considered is the type of litter box. If the cat has always used a covered litter pan, a change in body composition or mobility may make removing the cover important. If a cat has become overweight, it may no longer fit comfortably in a covered pan (or even in the uncovered pan that you are presently using. As

mentioned, an elderly cat may also find climbing into an uncovered pan, or a litterbox with lower sides, much easier. A covered pan may allow other cats to ambush a cat as they exit. And, covered pans may hold in odors that are associated with infrequent cleaning. A litter box preference test can help to determine which box your cat favors (discussed below).

The location of the litter pan can often be important for cats that do not use their litter box. Some cats may be unwilling to use a box that is difficult or inconvenient to access, or if the box is located in an area that the cat finds unappealing or unpleasant. For example, a box that is in the far recesses of the basement or near a furnace or washing machine may be undesirable. Older cats can find stairs an obstacle and be unwilling to go into the basement to use the litter box.

When there are multiple cats in the home, multiple pans in multiple locations may be needed. It is speculated that cats may not share the space they have equally, and be unwilling to go to some locations to use the litter box. If the relationship between cats is not harmonious, one cat may feel threatened when trying to get to the litter box and choose to go elsewhere. Most cats prefer privacy when they eliminate. If the litter box is located in a high traffic or noisy area in the home, the cat may avoid it. Moving the pan to another quieter location may encourage the cat to return to litter box use. A location preference test can help to determine which location your cat favors (discussed below).

How can I determine why my cat is house-soiling?

A cat may not use the litter box if it prefers another location or substrate, which may arise independently or because of avoidance of the present location or substrate. A substrate or location preference can be diagnosed by a careful history into where the elimination is found. If it is always found in one place, this indicates a location preference, while elimination on one particular surface type or texture (such as carpeting or tiled floors), indicates a substrate preference. Of course a preference for more than one location or more than one surface may also arise, and they are not mutually exclusive. For treatment, if it is happening in only one or two places, the problem might be resolved by preventing your cat from having access to that location unless it is supervised. When no one is home, or you are asleep, the cat may need to be confined. When you are at home, you should always know where the cat is. This can be accomplished by watching the cat or by using a bell on an approved cat collar or a leash and harness. Alternately, the location could be made aversive to the cat using devices mentioned in other sections (see our product resource handout). If the cat does not like where the litter box is located, due to disruptions in that location or inability to access the box, moving the box to a quieter, more secure location may also aid in getting the cat to return to regular litter box usage. Alternately, the surface can be made less appealing by changing the surface texture (remove the carpeting), or by making the surface uncomfortable (double-sided sticky tape, a plastic carpet runner with nubs up, remote punishment or booby-traps). In some cases, closing off doors can permanently prevent access to the area to the area, by putting up barricades, or confining the cat away from the problem area. The appeal of the surface can also be reduced by eliminating all odors that might be attracting the cat back to the area by cleaning and then by applying commercial odor neutralizers (See our product resource handout for more details). Sometimes changing the function of the area by turning it into a feeding, playing, sleeping or scratching area may reduce the cat's desire to eliminate in the area. Relatively speaking, making the soiled areas less appealing (by odor eliminators, less appealing surfaces or booby traps), may get the cat back to using its litter, or may drive the cat to a new unacceptable area (which might indicate that the problem is more likely one of avoidance). Therefore, you also need to make sure the litter box itself appeals to the cat.

How can we make the litter, litter box and area more appealing?

Besides making the location where the cat has eliminated aversive or inaccessible, the litter box needs to be made attractive to the cat. From the history, it may be possible to first determine some of the reasons that might be deterring the cat from using its litter box or litter area and these can first be resolved to increase the appeal of the litter. For example, more frequent cleaning, or switching litter materials may be useful, for other cats offering a different type of box is necessary. Then, try to determine what litter, location, and type of box might be preferable to your cat.

How can I tell what my cat would prefer?

To determine the most suitable litter for your cat, first determine what type of litter your cat seems to be avoiding and what type of surface your cat prefers to use. Then set up two or more boxes that are identical and fill the boxes with two different types of litter (litter box cafeteria). Some cats may prefer a clumping litter, cedar shavings, recycled newspaper, or plastic pearls. For cats that prefer solid or hard surfaces, an empty litter box, or one with minimal litter might do. A carpeted ledge around the box, artificial turf or some discarded or shredded carpet might help to increase the appeal for cats that prefer to eliminate on carpets, while some potting soil or a mixture of sand and soil, may be preferable for cats that eliminate in plants or soil. Making a good choice may require a little imagination and should be based on the type of surfaces in the home on which the cat is eliminating. If you prefer scented brands of litters, make sure this is also acceptable to your cat by comparing to an unscented brand. In your preference testing, if you find one litter type that is a clear favorite, discard the second type and continue your testing with other products. There are also commercial litter box attractants that might be useful.

To determine the most suitable box for your cat, you might want to look at the design of the box and find different types for preference testing. Use the litter type that was most preferable to the cat and try it in a variety of boxes to determine what the cat prefers. You might consider boxes with hoods and no hoods, a very large box, such as a plastic storage container, a box with lower sides or a ramp for access, boxes with or without litter liners and perhaps even self-cleaning types of litter boxes (appealing to some cats and frightening to others).

To determine if the cat has a clear location preference, you might begin by a litter box in the location where the cat eliminates. If the cat uses the box in that location, it should be left there for one week. Then the box can slowly be moved to a new location. This needs to be done very carefully to be sure that the cat follows the box and continues to eliminate in the litter box as it is moved. Most importantly, the box should be moved only 6-8 inches at a time. Then it should be left in each place at least one day. When trying to go from one room to another, or up or down stairs, longer distances can be covered as long as the cat follows the box and continues to use it. A room with better access or lighting or an area with more or less privacy from owners and other pets might be preferred. By altering the location of the litter box you might even be able to find something that has been deterring the cat (toilet, furnace etc) in the previous location.



I've made the litter more appealing and the house-soiling areas less appealing but the cat continues to eliminate in inappropriate areas. What next?

Even after making the litter area more appealing, decreasing the appeal of the soiled areas, and perhaps anti-anxiety drugs for anxiety induced or marking problems, the habit may persist. Confinement to an area with bedding, water and a litter box (and away from the areas that have been soiled) is often necessary to re-establish litter box use. Generally a small room such as a laundry room, extra washroom, or bedroom where the cat has not previously soiled should be utilized. Also be sure to confine your pet in an area where the litter box and litter area are appealing, where there are no obvious deterrents, and that has surfaces that the cat is unlikely to soil. In rare cases where the cat will not use its litter box at all, confinement in a cat cage with perches or a large dog cage with a floor pan covered in litter and a ledge for perching and sleeping may be needed to get the litter use restarted. Most cats will require confinement to this area for one to four weeks, (the longer the problem the longer the confinement period) to re-establish good litter use. Confinement may not be required all of the time. For example, if the cat only eliminates out of its box at night, or when the owners are preparing for work, then these are the only times that the cat may need to be confined. Many cats, when supervised will not eliminate in the inappropriate areas so that these cats can be allowed out of confinement when the owner is available to supervise. It may also be possible to allow cats out of confinement with minimal supervision for the first few hours after the cat has eliminated in its litter box. Allowing release from confinement and some food treats immediately following elimination may also serve to reward use of the litter box. Over time, cats that have been confined are gradually given more freedom and less supervision. However, there will be some cats that will use the box in confinement, but once back out in the home will revert to elimination in other locations.

My cat is defecating outside of the litter box, what should I do?

Medical problems must first be ruled out. Therefore careful attention to the cat's general health and mobility as well as to stool consistency and frequency are critical. Cats may defecate outside of the litter box if they have colitis or are constipated. Observation of the elimination may help to rule out pain and avoidance issues. If the defecation is found in a linear pattern be sure to ask about intercat aggression (the cat is defecating while fleeing) and possible constipation. Once medical problems have been identified and treated defecation outside of the box is diagnosed and treated in much the same manner as for urination housesoiling. It may be caused by substrate or location preferences or the problem may arise out of avoidance of the present litter, box or location. Treatment includes preference testing to find the preferred litter, box and area while preventing or deterring use of inappropriate areas. Confinement and supervision training can be particularly useful for inappropriate defecation. Start with a regular routine of feeding and play sessions and keep a diary of when and where the pet eliminates. Confinement may only be necessary at times when the pet may be due for defecation. The cat might then be allowed out of its litter confinement area until defecation is again due, at which time the pet should be closely supervised to inhibit and encourage regular use or again confined.

How will I know if the problem is improving?

Good record keeping is essential to gauge treatment success. In many cases there will be an increase in litter box use and a concurrent decrease of elimination in other locations prior to a total and complete return to litter box usage. Therefore keeping track of where elimination takes place on a daily basis should help track improvement or the lack of change. If elimination in the litter box is not increasing, changes to the treatment plan or an alternate diagnosis may need to be considered.

Are drugs useful in treating this problem?

Drug therapy can be a helpful adjunct where stress, anxiety, marking or a medical component is involved. It requires a thorough understanding of the indications, contraindications and potential side effects of the various drugs. An accurate diagnosis is needed to determine if such therapy will be helpful and which drug to choose. If the behavior is due to a surface substrate preference, location preference or any type of aversion, drug therapy is unlikely to be helpful. Commonly used drugs include buspirone, anti-depressants and benzodiazepines.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

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