

PROTOCOL FOR UNDERSTANDING AND TREATING CATS WITH ELIMINATION DISORDERS AND ELIMINATION BEHAVIORS THAT CONCERN CLIENTS

The most common behavioral concerns reported by clients about their cats involve litterbox use. Complaints about litterbox use can often be prevented and usually be successfully treated if the client becomes good at observing their cat's behavior. The key to resolving **all** elimination concerns is to recognize and be able to identify the pattern in the choices the cat makes about elimination. If clients can do this, the problem will resolve. Otherwise, you need to know that *the single biggest reason why cats are relinquished or euthanized involves elimination behaviors that the client views as problematic*, whether or not these are true behavioral problem for the cat.

Concerns about litterbox use generally involve one or more of the following complaints:

- The cat doesn't use the box at all.
- The cat uses the box for either urine or feces, but not both.
- The cat eliminates right next to or on the box, but not in it.
- The cat uses the box, but doesn't cover urine or feces.

There is one final elimination concern that actually does not involve the issue of litterboxes: spraying. **Spraying** is the term for the set of behaviors where cats deposit urine against a vertical surface like a wall, the back of a couch, a closet door, et cetera. The behaviors involved in spraying include:

- backing up against or within a few centimeters of the vertical surface,
- arching the back slightly when moving toward the vertical surface,
- raising the tail so that it is almost straight up and can be seen from a distance, like a flag,
- treading or kneading with the feet, usually the front feet,
- waving or wiggling the tail, particularly the tip, and
- partly closing the eyes while moving the ears back.

Spraying of urine usually, but not always, follows these behaviors.



An intact male cat exhibiting all of the behaviors, as listed, that are involved in spraying. In addition, he is rubbing his tail base against the cedar bench. This cat did not spray.

Spraying can be a normal behavior. You may not want to hear this, but it's true. Both male and female cats can and will spray, as will neutered/desexed cats. Neutering can decrease or stop spraying if it has been occurring for only a short while or it is related solely to estrus cycles or responses to them,

and neutered cats spray less than do cats who have their ovaries and testicles. In part, these findings about neutering and spraying are likely associated with the unique feline mating system:

- Male cats advertise for females, and females would live within family groups of related females, given the choice.
- Males may mate with more than one female in the group and try to prevent, with varying success, other males from having access to "their" females.
- Because female cats are induced ovulators, meaning that they need to be hormonally stimulated to be able to become pregnant, the scent of male urine is particularly important in this context.

If you watch your cat it will be clear how important the sense of smell is to cats. Urine can be a currency of scent to cats and they use it to signal to each other. Because of this signaling, whenever spraying is involved it is absolutely critical that you work closely with your veterinarian to understand all the social relationships in the household, and in the vicinity of the houses where the cat lives. Chances are, spraying is a nonspecific sign of social disruption or distress and spraying will not resolve unless the social concerns are addressed. See the **Protocol for Understanding and Treating Feline Aggressions with an Emphasis on Intercat Aggression** for situations where addressing litterbox hygiene does not help.



Cat spraying vegetation. (Photo courtesy of Anne Marie Dossche.)

Cats who do not use the box at all can be characterized or grouped by patterns of their elimination behaviors:

- The cat picks one class of objects on which to eliminate (e.g., blankets, bedding, bathmats, laundry, **or** in the shower, in the bathtub, on tile floors, in sinks, on linoleum, on wood). Note that here the types of surfaces—or substrates—on which cats eliminate are linked by texture. In the case of blankets, et cetera, the substrates chosen are all soft, and in the case of sinks, et cetera, all of the substrates chosen are smooth and cool to the touch. This problem is usually termed "**a substrate preference for elimination.**"
- The cat picks one type of location in which to eliminate (e.g., under the dining room table, next to the box, on the

bathroom floor, by the window near your side of the bed, et cetera). This problem is generally termed “a **location preference for elimination.**”

- The cat eliminates in a pattern that does not seem to be associated with how something feels, or where it is. When this happens it is extremely important that you consider two other possibilities:
 - that a medical problem is involved and
 - that the pattern of elimination is conveying information about concerns the cat has about the social environment.

In all of the above situations the cat could exhibit the problem for either urine or feces, or for both.

Finally, preferences can develop either innately, because the cat truly prefers some substrate other than the litter in the box, or they can develop after they learn to hate their litter or box. Cats who hate their litter, box, or something about the litter and box (e.g., a **substrate or location aversion**) will, by necessity, choose something else. Often these cats go through a period of sampling other locations or substrates, which may look like the cat is behaving in a random manner. This type of behavior is common early on in the development of the problem, but if the problem persists, the cats will ultimately choose a preferred substrate or location. **This is one reason why it is so important that you talk to your veterinarian—early and often—about your cat’s behaviors.**

The steps below are designed to help resolve substrate and location **preferences** and substrate and location **aversions**. These steps are intended to help reinforce what litterbox use that most people consider appropriate, while also meeting the cat’s social and personal hygiene needs. Please remember that the feline social system may also be having an effect on the behavior of a cat who is not using his litterbox—social interactions might be compounding the problem. You should watch for changes in relationships among the cats in your household, and also realize that changes in the canine and human relationships, schedules, and composition are all destabilizing influences on cats who like some degree of predictability. Accordingly, alterations of some social situations may be necessary to fully resolve an elimination problem.

Steps for Redressing Elimination Concerns:

1. Identify the problem. Approaches for handling a location versus substrate preference differ. Follow the cat around and see what the cat chooses in terms of area and substance on which to eliminate. If this doesn’t work, videotape the cat while she is at the litterbox. If the videocamera is on a tripod, most cats will ignore it and you will be able to see what behaviors the cat uses when she explores the litterbox. You can then view this video with your veterinarian and identify normal and promising behaviors, and ones that indicate a problem. Also, please consider videotaping normal daily activities of your cat and her interactions with anyone else—feline or not—in the household. If you do this, you will see your cat through new eyes, and with the help of your veterinarian, will learn about the problem and what you can do to fix it.
2. Because cats are so good at smelling and identifying odor, the step you immediately need to take is to clean, clean, and then clean again. First cleanings should involve

soaking the area with plain water (club soda or seltzer can also be used and may help urine that is deep into carpets to bubble to the surface). After soaking, blot the area. Repeat this until you can no longer detect even a trace of the scent of urine or feces on the towels that are used to blot the wet area. You will go through a lot of towels so consider using rags, disposable sponges, or paper towels. Remember, this is the baseline cleaning; repeat it more often if you can, because although you cannot smell the urine or feces, the cat will be able to do so. Once you think you are done, use a small blacklight (they are inexpensive) to go over all relevant areas: urine fluoresces. Continue to clean until you cannot detect it.



Cats are very good at detecting odor, and you may see your cat exhibiting this open-mouthed behavior when she sniffs around. This is a “Flehmen response.” This behavior helps the cat to aerosolize and understand chemical composition of odors.

3. All affected areas must be cleaned with a good odor eliminator. The best odor eliminators have both enzymatic capabilities to break down or degrade the substances in the urine, while making it harder for the scents to aerosolize when the cat sniffs the area. These include Nature’s Miracle (available at pet supply stores), FON (available at pet supply stores), PON (available at pet supply stores), Urine-Off (available online and off in numerous places), Get Serious! (www.getseriousproducts.com), Eliminate-Odor (available from veterinarians), The Equalizer (available from veterinary supply companies), Anti-Icky Poo/AIP (www.antiickypoo.com), and KOE/AOE (broadly commercially available). The last four have a reputation for being particularly effective. Febreze has also been noted to have good odor-elimination properties (e.g., if an odor eliminator is good the cat pays less attention than he otherwise would to the soiled area).
4. After cleaning, cover affected areas with heavy gauge plastic to both alter the tactile sensation for the cat and to prevent further penetration in the event of elimination.
5. Make the litterboxes appealing in a manner that meets the cat’s needs.
 - Get multiple litterboxes, generally one more than there are cats. If you have more than five cats, this may

- become problematic because large numbers of cats may render the olfactory stimulus too strong for many litterboxes to have more effect than would a half-dozen. Still, you should see how many boxes the cats willingly use and adjust your household to accommodate this number. Given the chance, the cats will tell you what they need.
- Place the litterboxes in a variety of locations. You should be guided in this by the choices your cat has already made. The places the cat chooses contain information about what the cat needs. Meet these needs. If the box is in a particularly awkward spot from your viewpoint, if the problem is a location preference, you will gradually be able to move the box (1 cm/day) once the cat has routinely used it for weeks. If you need to move the box for a party, both the cat and the box can be temporarily placed in a room in the house in which the cat is comfortable.
 - Choose litterboxes of a style the cat likes. Humans often like covered and small litterboxes because they keep down dust and odor, but cats do not.
 - Cats actually prefer larger boxes; research shows that cats prefer a box that is 1.5 times the length of the cat.
 - Additionally, only very shy cats may prefer closed boxes; some cats don't like them because they enclose smells or make the cat feel trapped.
 - Consider the depth of the box. Cats that are small or arthritic need easy access, and large, shallow boxes may be the best overall choice here. Few, if any, commercial litterboxes meet these needs so consider using unlined sweater boxes as litterboxes.
 - Throw out the box and get a new one as soon as there are scratches in the bottom of the box. These scratches are hiding holes for odor. Cats have reputations for being fastidious. This means that they don't want to use a smelly litterbox any more than you would want to use a smelly toilet.
 - Wash litterboxes at least weekly in very hot water. If you wish you can use a mild detergent if you rinse well. If you choose to use a disinfectant like bleach you must rinse, and rinse, and rinse. Strong, chemical smells are disliked by cats, and given their sense of smell, even a small odor will smell strong.
 - Choose a litter that the cat likes. How do you know what the cat will like? Mimic the texture of the objects chosen.
 - If the cat is choosing soft fabrics use a litter that feels soft (e.g., potting soil; number 3 blasting sand; soft, clumpable litters; litters made from puffed up, recycled paper or wood; plant-based litters; et cetera). Some cats will use the now commercially available chucks, or soft paper fabric pads that are lined in plastic. These have the advantage over litters of not having any components that can adhere to a cat's fur. **This concern may be very important for long-haired cats.**
 - If the cat is choosing smooth, cool, well-drained substrates that reflect light, either put a small amount of litter in the box, use a cookie sheet or gardening tray as a box, or line the box with ceramic tiles and use no litter. If the cat restricts elimination to a shower or sink, you may just want to make the decision to clean these multiple times per day rather than have the cat sample and learn about areas that are not so easy to clean. In the wild, cats prefer open, well-drained, reflective surfaces, like clear sand, and they may not cover their urine or feces. **Not covering elimination products is often a normal behavior.** You should only be concerned if there has been a dramatic change.
- Remember that cats like soft, clean-smelling substances. This means that litter that holds on to odor will not be preferred by cats.
 - Studies show that clumpable, recyclable litters may be terrific for humans but are not always so good for the cats. By reusing these litters we are actually stirring around and redistributing microscopic pieces of feces that come to coat the siliceous grains. From the cat's perspective, these litter grains stink, even if there are clean grains interspersed among them.
6. **Litter should be scooped at least daily, and most litters should be dumped totally at least every-other-day.** The clumpable litters must also be scooped multiple times per day, but can be topped up and stirred. Still, given the findings about microscopic feces adhering to the grains, these litters should be dumped and replaced considerably more often than is discussed on their labels. Dump them every few days, and more often if more than one cat is using the box.
 7. Not all cats prefer the same litter depth. Some cats like to dig in deeper areas but some don't like to bury their paws. Learn what your cat likes. One hint is that cats dig more in litters they like, whether or not they cover their urine and/or feces.
 8. Mechanized litterboxes and other novel formats can and will be used by some cats, but the risk may be greater that the cat will not like these. These boxes are not for fearful cats or those who easily startle. Although they are most appealing because of ease of clean-up, we need to remember that the point of a litterbox is actually to meet the cat's needs.
 9. Please remember that cats are not truly "trained" to litterboxes in the sense that we think of "houstraining" a dog. Seeking out a preferred substrate, digging, and covering urine or feces, if the cat chooses to do so, are behaviors that develop in kittens in the absence of human intervention. Accordingly, we cannot train cats with an elimination problem to use a litterbox; however, they can be encouraged to do so by taking the cat to the litterbox frequently, waiting with him, and praising him whenever he uses the box. Remember that elimination behaviors in ancestral cats may include urinating and defecating in different places, and seeking out reflective, open, well-drained substrates for elimination. Not all cats will cover their urine or feces and this can be **normal**.
 10. If the cat is seen to squat outside the box, punishment or extreme startle will only make the cat more secretive about where or when she eliminates. If you use a gentle interruption and it occurs as the cat is beginning to eliminate (e.g., when she sniffs, circles, et cetera), such interruption may work to stop the cat from eliminating in the undesired spot. This will only work if you can then take

the cat to a preferred spot, have the cat use it, and praise the cat. Frankly, this sequence of behaviors is not highly likely. Given the amount of damage we can do by scaring a cat, we may wish to abandon this and related tactics. **Regardless, punishment after the fact is useless and physical punishment, including rubbing the cat's nose in the soiled area, should be avoided at all costs because it teaches the cats to avoid their people, and may also lead to physical or behavioral injury of the cat.**

11. Some cats may benefit from being confined to a restricted area at first. If you do this, make sure that the cat has the same choice of litters/boxes discussed above and that you pay **lots** of attention to the cat during its confinement. If this was a very social cat before confinement, confinement has to be arranged to meet the cat's social needs. If the behavior of the other cats in the household changes when one is isolated, this hints to a social problem that may need to be addressed as part of the therapy for the elimination disorder. Access to the rest of the house can be expanded once these cats are using litter appropriately in the confined area. It is important that the expanded access be closely supervised both because of the potential relapses and because of potential social problems that may not have been previously recognized. A bell attached to a break away collar can act as a reminder that supervision is necessary (Bear Bells, www.rei.com). Access should be gradually expanded; don't give the cat free access to the entire house all at once after 6 weeks of confinement. If the cat has truly learned and demonstrated a preference for a litter or box style, this will generalize to the rest of the house only if the reintroductions are gradual. Please remember that the number of boxes still has to be maintained at the increased number and all cleanliness rules still apply.
12. Take into account the way cats perceive scent and make this work for you.
 - Do not use plastic liners. Whether or not they are scented, they smell different to the cat. Cats also usually do not like the additional texture.
 - Do not use scented litters. Consider the cat's needs first. Scents that mask the scent of elimination products for you may be very upsetting to cats.
 - You can try placing a mint-scented bar of soap in an area the cat has soiled. Some cats will avoid it. Some won't, but you have done no harm.
13. Good hygiene for litterboxes can also contribute to good hygiene and healthcare for humans. Immunocompromised and other at-risk individuals need to take care in handling cat feces. See the following websites for more information: www.petsandparasites.org./cat-owners/; www.cdc.gov/parasites/toxoplasmosis/gen_info/pregnant.html.
14. Anti-anxiety medications may help some cats that are otherwise unable to succeed with this program. Please remember, if it is decided that your pet could benefit from anti-anxiety medication, you will need to use it in

addition to the behavioral and environmental medication, above. All anti-anxiety medication should be used judiciously, and only after a thorough physical examination has been performed, and laboratory tests have determined that your cat is not unduly at risk from side effects of the drugs.

Tick List:

- I. General
 - Scoop litterboxes daily.
 - Dump litter at least every other day.
 - Wash the litterbox in hot, \pm mild soapy water once a week; use no ammonia products and make sure that the box is well rinsed and dried.
 - Soak soiled areas with clear water and blot dry; repeat until NO scent is detectable to you, then repeat again.
 - Clean soiled areas with an odor eliminator, repeat, and cover to prevent re-soiling.
 - Take cat to the box often and praise for scratching and/or use.
 - Provide one more box than the number of cats.
 - Change litter types, depths, and box styles.
 - Make sure that the box is at least 1.5 cat-lengths long.
- II. Location preferences
 - Follow General instructions above.
 - Place a scent deterrent in area (mint or deodorant scented soap).
 - Place food and/or water dishes on the spot(s).
 - Place a litterbox on the spot.
- III. Substrate preferences
 - Follow General instructions above.
 - Try different litters:
 - Types tried
 - 1. _____
 - 2. _____
 - 3. _____
 - 4. _____
 - Try covered versus open boxes.
 - Try different depths of litter.
- IV. Provide your veterinarian with routine information on your cat's behavior at every visit. This history tick list will help. Bring a completed copy to your veterinarian at each appointment.

The questionnaire below is a survey questionnaire that can be used at **any and all veterinary visits** to help you review subjects about which you might have questions. This questionnaire will also allow you to see if your pet's behaviors change over time. This questionnaire, when used at each visit, will tell you if further information is necessary and hint at some of the underlying factors contributing any problems that are identified. This questionnaire will also give you the vocabulary and opportunity to discuss your pet's behaviors with your veterinarian in an efficient, consistent, and meaningful way.

	<p>(d) Is the pattern different on days when you are home and days you are not home?</p> <p>(e) Are you at work during the hours when the cat defecates?</p> <p>(f) How many times per day does your cat usually defecate when he or she is not defecating in places you find undesirable?</p>															
<p>10. Does your cat destroy any objects or anything else by chewing, sucking, or eliminating on them (e.g., furniture, rugs, clothes, et cetera) now?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, what objects specifically does the cat destroy? Please list all of them and note which are destroyed when you are home or not home—please note if they destroy at both times—tick both columns:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Object</th> <th style="width: 20%;">When home</th> <th style="width: 20%;">When gone</th> </tr> </thead> <tbody> <tr> <td> </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td> </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td> </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td> </td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>	Object	When home	When gone		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
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<p>11. Does your cat mouth, bite, suck, or nip anything or anyone?</p>	<p>a. <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, to whom is this behavior directed?</p> <p>b. Is this a problem for you?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>															
<p>12. Does your cat exhibit any vocalization about which you are concerned?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, what is/are the vocalization(s) and when do they occur:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Vocalization</th> <th style="width: 60%;">Situation in which it occurs</th> </tr> </thead> <tbody> <tr> <td>a. Yowling</td> <td> </td> </tr> <tr> <td>b. Growling</td> <td> </td> </tr> <tr> <td>c. Meowing</td> <td> </td> </tr> <tr> <td>d. Hissing</td> <td> </td> </tr> </tbody> </table>	Vocalization	Situation in which it occurs	a. Yowling		b. Growling		c. Meowing		d. Hissing						
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<p>13. Does your cat show any signs of hissing, growling, or biting?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, what does the cat do and when does he or she do it?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Sign</th> <th style="width: 60%;">Situation in which it occurs</th> </tr> </thead> <tbody> <tr> <td>a. Hissing</td> <td> </td> </tr> <tr> <td>b. Growling</td> <td> </td> </tr> <tr> <td>c. Biting</td> <td> </td> </tr> </tbody> </table>	Sign	Situation in which it occurs	a. Hissing		b. Growling		c. Biting								
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<p>14. Have you ever been concerned that your cat is "aggressive" to people?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, why?</p>															
<p>15. Have you ever been concerned that your cat is "aggressive" to cats?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, why?</p>															
<p>16. Have you ever been concerned that your cat is "aggressive" to animals other than cats?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, why?</p>															
<p>Does your cat hunt or prey on other animals?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If you answered yes, which animals and where?</p>															

<p>17. Has your cat ever bitten or clawed anyone, regardless of the circumstances?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If yes, what happened?</p>
<p>18. Has your cat had any changes in sleep habits?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, what are these changes?</p>
<p>19. Has your cat had any changes in eating habits?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, what changes have occurred?</p>
<p>20. Has your cat had any changes in locomotor behaviors or the ability to get around or jump on the bed, et cetera?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, what changes have occurred?</p>
<p>21. Has anyone ever told you that they were afraid of your cat?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, what did they say?</p>
<p>22. Has anyone every told you that your cat was ill-mannered?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, why—what did the cat do that made them say this?</p>
<p>23. Do you have any concerns about your cat's grooming behaviors?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, a. Little to no grooming b. Sucking c. Chewing d. Licking e. Self-mutilation/sores f. Barbering/trimming g. Plucking out clumps of hair</p>
<p>24. Is the cat exhibiting any behaviors about which you are concerned, worried, or would like more information?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, please list these behaviors below:</p>