

Marking Behaviors in Cats

What is spraying?

Spraying is the deposition of small amounts of urine on vertical surfaces. The spraying cat may be seen to back into the area, the tail may quiver, and with little or no crouching the urine is released. Although much less common, some cats will also mark their territory by leaving small amounts of urine or occasionally stool on horizontal surfaces.

Why do cats “mark” with urine?

Cats mark the locations where they live or where they frequent in many ways. Cats will mark with scent glands on their feet, cheeks, face and tail as well as with urine. Cheek rubbing (bunting) and scratching (with both the odor from the glands in the footpads and the visual mark) are both forms of marking. Deposition of an odor communicates that the animal was in a location long after that animal has gone. Cats will mark their territory to signal “ownership” and to advertise sexual receptivity and availability. Marking can occur due to other cats in the vicinity either outdoors, or among cats that live in the same household. Cats will also mark their territory when they feel threatened or stressed. This can occur with a change in household routine, compositions, living arrangements, new living locations and other environmental and social changes. In these cases the marking pattern may be related to new objects brought into the household, or the possessions of family members, especially those with which there is the greatest source of conflict or insecurity. Because marking is a method of delineating territory, urine is often found in prominent locations, at entry and exit points to the outdoors such as doors and windows and around the periphery. When outdoors, cats might tend to mark around the periphery of their property, prominent objects on the property, new objects (e.g. a new tree) introduced into the property, and locations where other cats have marked.



Which cats are more likely to urine mark?

Both male and female cats can mark with urine. Urine marking is most common in intact (non-neutered) male cats. When an intact male sprays urine, it will have the characteristic “tom cat” odor that is strong and pungent. Neutering will change the odor, and may reduce the cat’s motivation for spraying, but approximately 10% of neutered males and 5% of spayed females

will continue to spray. While cats in multiple cat households are often involved in spraying behaviors, cats that are housed singly may spray as well.

Instead of spraying, I am finding multiple locations of small amounts of urine.

What does that mean?

Some cats will mark their territory with small amounts of urine (and on rare occasions, stool) in various locations. These locations can be similar to those for spraying, i.e. near doors, windows, new possessions in the home or favored locations, but may occasionally be found on owner's clothing or other favored possessions. However, small amounts of urine deposited outside of the litterbox is more commonly due to litter box avoidance which could have many causes including diseases of the lower urinary tract. Similarly stool found outside of the litter box can be due to a multitude of causes including colitis, constipation and any other condition leading to difficult, more frequent or uncomfortable elimination. As with any other elimination problem, a complete physical examination and laboratory tests are necessary to rule out each physical cause.

How do I treat a spraying or marking problem?

As with all behavior problems, the history will help determine treatment options. The location of the urine marking, the frequency, duration and number of locations are important. The number of cats both inside and contacts outside of the home should be determined. Changes in environment, social patterns of humans and animals, and additions (people, pets, furniture, renovations) to the home should also be examined.



If the cat is not already neutered, and is not a potential breeder, castration is recommended. A urinalysis should be performed to rule out medical problems. The location of the urine spots should be determined. Is the urine found on walls, 6-8 inches up from the floor, or are the small urine spots found in multiple locations?

Treatment is aimed at decreasing the motivation for spraying. It has been shown that spraying may be reduced in some cases by reviewing and improving litterbox hygiene. Ideally the minimum number of litter boxes should equal the number of cats plus one, the litter should be cleaned daily and changed at least once a week, and proper odor neutralizing products should be used on any sprayed sites. In addition any factors that might be causing the cat to avoid the use of its litter should be considered (See our handout on 'House-soiling in cats' for more details).

If marking appears to be stimulated by cats outside of the home, then the best options are to find a way to deter the cats from coming onto the property or prevent the indoor cat from seeing, smelling or hearing these cats. See our handout 'Controlling undesirable behavior in cats' and our handout on 'Behavior management products' for remote control devices and booby traps that can be used to deter outdoor cats and to keep indoor cats away from the areas where they are tempted to mark. It may be helpful to house your cat in a room away from windows and doors to the outdoors, or it may be possible to block visual access to windows. When you are home and supervising you can allow your cat limited access to these areas. It also may be necessary to keep windows closed to prevent the inside cat from smelling the cats outside, and to use odor neutralizers (See our handout on 'Behavior management products') on any areas where the outdoor cats have eliminated or sprayed.

If the problem is due to social interactions inside the home, it may be necessary to determine which cats do not get along. Keep these cats in separate parts of the home with their own litter and sleeping areas. Reintroduction of the cats may be possible when they are properly supervised. Allowing the cats together for positive experiences such as feeding, treats and play sessions, helps them to get used to the presence of each other, at least on a limited basis. However, when numbers of cats in a home reach 7-10 cats, you will often have spraying and marking problems.

I've cleaned up the spot but the cat keeps returning to spray. What else can be done to reduce the problem?

Since the “purpose” of spraying is to mark an area with urine odor, it is not surprising that as the odor is cleaned up, the cat wants to refresh the area with more urine. Cleaning alone does little to reduce spraying. Cats that mark in one or two particular areas may cease if the function of the area is changed. It is unlikely that cats will spray in their feeding, sleeping or scratching areas. It has also been shown that cats that mark an area with cheek glands are less likely to mark in other ways such as with urine. In fact it might be said that cats that use their cheek glands are marking in a more calm, familiar manner while those that urine mark are doing so in a more reactive, anxious manner. A commercial product containing synthetic cheek gland scent has proven to be an effective way of reducing urine marking in some cats. When sprayed on areas where cats have sprayed urine or on those areas where it can be anticipated that the cat is likely to spray, it may decrease the likelihood of additional spraying in those areas. The scent of the pheromone may stimulate cheek gland marking (bunting), rather than urine spraying. It is also available as a room diffuser that covers about 700 square feet for cats marking multiple sites. It has also been used to calm cats in new environments including the veterinary hospital and to help familiarize the cat with a new cage or cat carrier.

Where practical, a good compromise for some cats is to allow them one or two areas for marking. This can be done by placing a shower curtain on the vertical surface, tiling the area, or by taking two plastic litter boxes and placing one inside the other to make an L-shape (with the upright surface to catch the marked urine). Another option is to place booby traps in the sprayed areas, but spraying of another area may then develop.

Are there any drugs that are available to treat this problem?

Over the years many pharmacological means have been tried to control spraying behaviors. The choices have focused on the theory that one of the underlying causes for spraying and marking behaviors is anxiety and territorial competition. For that reason, anti-anxiety drugs such as buspirone and the benzodiazepines have been used with varying degrees of success. More recently antidepressants such as fluoxetine and clomipramine and have proven to be effective for controlling marking in some cats. Dosing, cost, and the potential for side effects will all need to be considered in selecting the most appropriate drug for your cat. (For more details see our handout on ‘Behavior drug therapy’).

Summary on Urine Marking/Spraying

- Agonistic interaction between cats is a common trigger for urine marking - this potential cause should be fully explored and addressed in the behavioral history and treatment plan.
- Environmental management of the litter box, improving litter box hygiene, and meeting the needs of the cats in the home can improve outcome.
- Pheromone products (Felaway) may also be useful.

- Medication is beneficial to cats that continue to urine mark. Recent evidence suggest fluoxetine or clomipramine can decrease the frequency of urine marking and in some cases a response (a decrease in urine marking frequency) can occur within the first week, but many cats need to be treated for 8 weeks or longer. When urine marking resumes after drug withdrawal, many cats will respond to reinstatement of the medication.