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Urine Marking in Cats

Although almost all the male cats in my practice are neutered, I still have owners complaining about urine marking. What treatments seem to work best?



Urine marking in cats is probably a normal, albeit always unwanted, behavior. Hart and Cooper found that about 10% of castrated male cats and 5% of spayed female cats urine mark as adults.¹ Recent research compared the urinalysis results of cats that were urine marking with those that were not. There was no difference between groups in the results,² suggesting that urine marking is not necessarily related to pathologic conditions of the lower urinary tract.

Causes of Urine Marking

Further research has attempted to find causal factors for urine marking in cats. Pryor and colleagues evaluated the effects of environmental management alone on the frequency of urine marking and attempted to obtain demographic data on cats that were urine marking.³ Their data found that male cats and cats from multiple-cat households were overrepresented when compared with the general cat population in California.

In this study, agonistic interactions between cats either inside or outside the home and limited access to the outdoors were the most commonly mentioned suspected causal factors for urine marking. In addition, environmental management (increasing number of litter boxes in

house to the number of cats + 1, cleaning urine marks with an enzymatic cleanser, scooping waste from the litter box daily, and cleaning and changing the litter box weekly) resulted in an overall decrease ($\geq 50\%$ compared with baseline) in urine marking behavior for some cats, with female cats more likely to respond positively to these changes.

These data suggest that environmental treatment modalities might be useful when owners are faced with urine marking in cats; however, it is unknown which of the individual environmental management factors provided beneficial results.

Treatment Options

Intercat Aggression

Because agonistic interactions between household cats was cited as a possible cause of urine marking, having an adequate number of resources spread throughout the environment may be helpful. For example, maintaining an environment with plenty of litter boxes, food and water bowls, resting areas, perches, and hiding areas spread throughout the available space may help reduce chance meetings and perhaps agonistic interactions. In some severe cases, treatment for intercat aggression should be instituted and the cats separated when not in a formal reintroduction program.⁴ For cats that become

agitated by cats seen outdoors, blocking access to the window or covering the window may be useful. Use of remotely activated devices, such as motion-activated sprinklers, may keep outdoor cats away from the property.

Pheromones

An intervention that utilizes pheromones (Feliway; Ceva Santé Animale, www.ceva.com) is also available for treatment of urine marking in cats. A double-blind, placebo-controlled trial found that, after 4 weeks of treatment, cats exposed to pheromones had a significantly lower mean level of marking than cats treated with placebo.⁵ Another trial assessed the clinical effect of a pheromone product on urine marking cats in Japan.⁶ The data showed that pheromone therapy decreased the behavior but that the frequency of marking was sustained at a higher level in cats with intercat aggression.

Medications

Over the years, many pharmacologic interventions to reduce anxiety and urine marking have been evaluated. However, at the present time there are no drugs approved for use in treatment of feline urine spraying; any medication prescribed should be considered extra-label usage. Appropriate disclosures, cautions, and potential side effects should be discussed with

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owners prior to dispensing medication. Open-label trials with diazepam, progestins, and buspirone showed that all of these drugs could decrease the frequency of urine marking; however, once the medication was withdrawn, urine marking would return in a high percentage of cases, and some medications had problematic side effects.^{7,8}

Recent research has shown that fluoxetine and clomipramine may be useful to treat urine marking in cats. A double-blind, placebo-controlled trial found that fluoxetine (1 mg/kg PO Q 24 H), along with environmental management, considerably reduced the rate of urine marking.⁹ A randomized, controlled clinical trial compared clomipramine at 3 doses (0.125 to 0.25, 0.25 to 0.5, and 0.5 to 1 mg/kg PO Q 24 H) with placebo for control of urine marking in cats.¹⁰ All owners in this trial were given information on behavioral treatment and environmental modification. Compared with placebo, clomipramine significantly reduced the frequency of urine spraying in cats, both in the number of spraying events per day and the number of days with urine spraying events. On the basis of the study data, the authors recommend an initial clomipramine dose of 0.25 to 0.5 mg/kg PO Q 24 H. In both studies, however, many cats returned to urine marking after abrupt withdrawal of the medication.

Another study examined whether:

- Clomipramine differed from fluoxetine in reducing urine marking
- Reduction of urine marking in cats continued in cats treated for a period longer than 8 weeks
- Recurrence of urine marking after abrupt withdrawal of the medication was reduced in cats treated for more than 8 weeks
- Cats successfully treated with either medication that resumed marking after drug withdrawal could be treated successfully again with the same drug regimen.¹¹

Although the study was small, the data revealed that the efficacy of fluoxetine and clomipramine was similar. Animals treated with fluoxetine longer than 8 weeks showed increased efficacy



at a glance

- Take a comprehensive behavioral history to determine whether:
 - Intercat aggression is occurring
 - Litter box hygiene and resource distribution are optimal.
- Separate cats that are fighting.
- Consider use of pheromones and/or medication.

in reduction of urine marking. However, some cats needed to be treated for 32 weeks to reach $\geq 90\%$ reduction in urine marking. When fluoxetine was abruptly withdrawn, most cats reverted to urine marking behaviors; however, those that responded to the first treatment regimen responded again after the medication was reinstated.

Multimodal Management

Following are some take-home messages about urine marking:

- **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** may also be useful.
- **Medication** is beneficial to cats that continue to urine mark. Recent evidence suggests that 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. ■

See Aids & Resources, back page, for references, contacts, and appendices.

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