

# HOUSESOILING—CATS: INAPPROPRIATE URINATION AND URINE MARKING

## BASICS

### OVERVIEW

- Urinating or marking territory in a location that the owner considers inappropriate
- Housesoiling includes inappropriate urination by indoor cats and urine marking
- Inappropriate urination is characterized by the cat simply squatting and urinating on horizontal surfaces outside of the litter box
- Urine marking occurs most commonly when the cat sprays urine on vertical surfaces outside the litter box; also known as “urine spraying”
- The “lower urinary tract” includes the urinary bladder and the urethra (the tube from the bladder to the outside, through which urine flows out of the body)

### SIGNALMENT/DESCRIPTION of ANIMAL

#### *Species*

- Cats

#### *Predominant Sex*

- Urine marking or spraying is more common in intact and neutered males than in females

### SIGNS/OBSERVED CHANGES in the ANIMAL

#### *Inappropriate Urination*

- Sudden (acute) or long-term (chronic) problem
- Signs of lower urinary tract disease (such as straining to urinate) or generalized (systemic) illness may suggest an underlying medical problem.
- Presence of abnormal physical findings depends on whether problem is a disease-related or behavioral problem

#### *Urine Marking*

- Usually manifest as spraying—the cat moves so the rear quarters are close to a vertical surface, the cat stiffens its posture, raises and quivers its tail, and directs a small burst of urine toward the vertical surface
- Urine marks may be detected around doorways or windows or prominent furniture or on new objects brought into the house
- Horizontal urine marks may be found on clothing or bedding associated with a particular person or on new objects brought into the house

### CAUSES

#### *Medical Abnormalities Associated with Inappropriate Urination*

- Lower urinary tract disease (such as feline lower urinary tract disease [FLUTD] or lower urinary tract infection)
- Presence of stones (known as “uroliths”) in the urinary tract (condition known as “urolithiasis”)
- Diabetes mellitus (“sugar diabetes”)
- Excessive levels of thyroid hormone (known as “hyperthyroidism”)
- Feline leukemia virus (FeLV) infection
- Feline immunodeficiency virus (FIV) infection
- Liver disease
- Senility or decline in thinking, learning, and memory, frequently associated with aging (known as “cognitive dysfunction”)
- Caused by or related to medical treatment (known as an “iatrogenic abnormality”)—administration of fluids, steroids, medications to remove excess fluids from the body (known as “diuretics”)

#### *Environmental Factors Contributing to Urine Housesoiling*

##### *Litter Box Characteristics*

- Soiled litter box
- Inadequate number of litter boxes or locations (one litter box per cat plus one is recommended)
- Litter box located in remote or unpleasant surrounding or subject to interference by dogs or children
- Inappropriate type of litter box—a covered litter box may maintain odors at an offensive level or may be too small to allow large cats to move around comfortably; a covered litter box allows other cats, pet dogs, and young children to “target” the cat as it exits
- Time factors—daily or weekly patterns of inappropriate urination suggest an environmental cause; sudden (acute) onset in a cat that previously has used the litter box reliably suggests a medical problem
- Type of litter—litter type that is unacceptable to the cat (for example, scented litter may not be acceptable); preference tests indicate that most cats prefer unscented, fine-grained (clumping) litter; change in litter-box habits that coincide with introduction of a new litter type suggests an association with the change of litter

- Sudden shift from using litter in the litter box to urinating in an unusual location (such as urinating in a porcelain sink) suggests a lower urinary tract disorder
- Location—urination outside the litter box may suggest a location preference or influential social factors
- Social dynamics—consider social conflicts between cats and any changes in the social world of the cat at the time the problem started (such as addition of a new cat to the household)

#### ***Environmental Factors Contributing to Urine Marking***

- Probability of urine marking or spraying is directly proportional to the number of cats in the household
- Presence of outdoor cats may elicit urine marking or spraying around doorways and windows
- Urine marking or spraying may be a response to another cat in the home or outside the home
- Urine marking or spraying on grocery bags or new furniture suggests olfactory marking, associated with arousal in response to new stimuli
- Urine marking or spraying on clothing or bedding may be associated with specific people or visitors

#### **RISK FACTORS**

##### ***Inappropriate Urination***

- Infrequently changed/cleaned litter box (or boxes)
- Frequent travel by owner (possible sign of separation anxiety in the cat)

##### ***Urine Marking***

- History of urine marking by a parent of the cat
- Multiple-cat households

## **TREATMENT**

#### **HEALTH CARE**

- Treat any underlying medical condition
- Use environmental and behavioral therapies before or with medical treatment (See [www.vet.osu.edu/indoorcat](http://www.vet.osu.edu/indoorcat))
- Use barriers or electronic motion detectors to restrict the cat from rooms in which urine soiling occurs
- If the owner requires immediate cessation of the problem, it is helpful to confine the cat to one room in the owner's absence; provide a litter box, water, food, and resting sites in this room; the cat can be let out of the room when the owner returns and is available for strict supervision of the cat
- Clean urine "accidents" with an enzymatic cleaner specific for this purpose
- Number the litter boxes and count and record the number of urinations in each box and outside the litter boxes each day

##### ***Inappropriate Urination***

###### *Environmental Management Techniques*

- Scoop out the litter boxes daily and clean thoroughly weekly and refill
- Avoid deodorizers or other strong odors in the vicinity of the litter box
- Move food bowls away from the litter box
- Provide at least one litter box per cat, distributed in more than one location, and avoid high traffic or noisy areas
- If the litter box is covered, provide an additional large, plain, uncovered litter box filled with unscented, fine-grained, clumping litter, with no liner
- Additional boxes may be provided, using a different type of litter in each (so called "litter-box buffet") to evaluate the cat's preference for litter-box type and litter
- If one site in the home is preferred for inappropriate urination, place another litter box over this site—after the cat uses this box regularly, move it gradually (several inches a day) to a site more acceptable to the owner
- Confinement of the cat in a "safe room" when the owner is not available to supervise may be necessary

###### *Behavior Modification*

- Punishment (such as using a water pistol or sound alarm) is not effective and will increase the cat's anxiety
- Punishment associated with sounds or movements by the owner will condition the cat to avoid the owner
- Feeding or playing with the cat at the location(s) where the cat is urinating inappropriately may countercondition the unacceptable behavior; "counterconditioning" is training the cat to demonstrate a positive behavior in place of the negative behavior (in this case, inappropriate urination)

##### ***Urine Marking***

- Neuter intact male cats and spay intact female cats—this curbs spraying behavior in up to 90% of males and 95% of females that spray
- If signs suggest that the cat is spraying in response to cats outside their house, prevent visual or olfactory access to those cats; an environmental product (Feliway®, Veterinary Product Laboratories), a concentrate of synthesized feline facial pheromone, is available commercially as a treatment for urine marking—the product is sprayed regularly or diffused in the environment and may improve urine spraying in up to 75% of cases
- Block "inside" cat's ability to see "outside" cats
- Spend time interacting with the cat daily to focus the affected cat's attention away from other cats
- Medications play an important role in the control of urine marking

## MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

### ***Inappropriate Urination***

- Usually are not indicated, except in treatment-resistant cases or when inappropriate urination is associated with generalized anxiety

### ***Urine Marking***

- Medications to decrease arousal and anxiety; medications commonly used include clomipramine, amitriptyline, buspirone, fluoxetine

### ***Other Medications***

- Synthetic progestins—the risk of serious side effects has diminished their once-common use; discuss the risks and benefits with your cat's veterinarian

## FOLLOW-UP CARE

### **PATIENT MONITORING**

- Keep a daily log of urination patterns so that treatment success can be evaluated and appropriate adjustments in treatment can be made
- Regular follow-up is essential

### **POSSIBLE COMPLICATIONS**

- Treatment failure may result in the cat being euthanized, relinquished at an animal shelter, or released outside

### **EXPECTED COURSE AND PROGNOSIS**

- Client expectations must be realistic—immediate control of a longstanding problem of housesoiling is unlikely; the goal is gradual improvement over time

## KEY POINTS

- Urinating or marking territory in a location that the owner considers inappropriate
- Inappropriate urination is characterized by the cat simply squatting and urinating on horizontal surfaces outside of the litter box
- Urine marking occurs most commonly when the cat sprays urine on vertical surfaces outside the litter box; also known as “urine spraying”
- Client expectations must be realistic—immediate control of a longstanding problem of housesoiling is unlikely; the goal is gradual improvement over time

