

Inappropriate Elimination--Cats

BASICS

DEFINITION

A behavior problem characterized by failure on the part of a cat to voluntarily urinate or defecate in an available litter box. This chapter addresses problems related to urine. Feline housesoiling includes both inappropriate urination, characterized by simple (squat) urination on horizontal surfaces outside the litter box, and urine spraying on vertical surfaces outside the litter box.

Pathophysiology

With inappropriate urination, the cat's behavior may be entirely normal or a pathophysiological state may underlie the behavior problem. Urine spraying is a normal marking behavior in cats. There are widespread individual differences in the propensity to spray urine, and there may be a heritable component to the behavior.

Systems Affected Renal/Urologic

SIGNALMENT

- Inappropriate urination can occur in any age, breed, or sex.
- Urine spraying is more common but not restricted to intact and neutered males.

SIGNS

Inappropriate urination

- Urination on horizontal surfaces outside the litter box.
- The intensity and duration of the problem vary greatly.

Urine spraying

- The owner may have seen the cat display: It orients to a vertical surface, raises and quivers its tail, and directs a stream of urine caudally in the process of urine spraying.
- The owner may detect urine around doorways or windows. This urine is sprayed in response to an outdoor cat.

CAUSES

This problem is often strictly behavioral. This is especially true with urine spraying. However, inappropriate urination may be associated with medical conditions, particularly those associated with [polyuria and polydipsia](#), [dysuria](#), and [pollakiuria](#).

Medical Abnormalities Associated with Inappropriate Urination

- Diabetes mellitus
- Urolithiasis
- [Hyperthyroidism](#)
- Administration of corticosteroids and diuretics
- [FeLV](#)
- FIV
- [FIP](#)
- Lower urinary tract disease
- Interstitial [cystitis](#)
- Intracranial cuterebral migrations
- [Dysautonomia](#)
- Seizures

Environmental Factors Contributing to Inappropriate Urination

Litter Box Characteristics

- Soiled box
- Inadequate number of boxes (one box per cat).
- Box located in remote or unpleasant surrounding (e.g., a relatively inaccessible basement and noisy laundry room).
- Inappropriate type of box. A covered litter box may maintain odors at an offensive level or may be too small for 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.
- Wrong litter type. Preference tests indicate that more cats prefer unscented, fine-grained (clumping) type litter over other substrates, but individual differences in litter preference must be considered.

Time Factors

Daily or weekly temporal patterns of inappropriate urination may suggest a patterned, environmental cause. An acute onset in a cat that has previously reliably used the litter box suggests a medical problem. Chronic (months to years) problems have a guarded prognosis for complete resolution.

Substrate

An acute shift from one substrate such as litter to an unusual substrate such as a porcelain sink suggests a lower urinary tract disorder.

Location

Location of the urination may suggest a substrate preference or influential social factor.

Social Dynamics

Consider any concomitant changes in the social world of the cat at the time the problem started.

Environmental Factors Contributing to Urine Spraying

- The more cats in the household, the greater the probability that at least one cat will spray urine.
- The presence of outdoor cats, either owned or feral, increases the risk of urine spraying by indoor cats.
- Spraying restricted to sites around doorways and windows suggests response to an outdoor cat.

RISK FACTORS

- Multiple-cat households
- Households in which the owner travels frequently
- Households in which the litter box (or boxes) is infrequently changed

DIAGNOSIS

DIFFERENTIAL DIAGNOSIS

It is extremely important to differentiate inappropriate urination from urine spraying (see signs) because treatment is different.

The most common cause of inappropriate urination is dissatisfaction with some quality of the litter box.

The most common cause for urine spraying is urine marking in response to the presence of other cats.

CBC/BIOCHEMISTRY/URINALYSIS

Findings vary with the underlying cause. Results are usually normal in cases of urine spraying and inappropriate urination when it is strictly a behavioral problem. Urinalysis is the minimum data base in any cat examined because of inappropriate urination. Serial samples should be collected in cats whose behavioral signs wax and wane.

OTHER LABORATORY TESTS

Cats with refractory inappropriate urination should be tested for thyroid disorders, FeLV, and FIV.

OTHER DIAGNOSTIC PROCEDURES

In multicat households, it may be difficult to determine which cat is responsible for inappropriate elimination. The offending cat may be identified in one of two ways:

1. Isolate each cat one at a time in a small room to identify the culprit by process of elimination. However, such a protocol may sufficiently alter the social milieu that inappropriate elimination may not occur.
2. Administer the dye fluorescein (6 fluorescein test strips in a gel capsule PO) sequentially to each cat. Urine outside the litter box fluoresces under a Wood's light for approximately 24 hours. If negative after 36 hours, the test can be repeated on another cat.

TREATMENT

- Treat any underlying medical condition.
- Intact animals should be neutered, because this curbs spraying behavior in up to 90% of males and 95% of females.

INAPPROPRIATE URINATION

Cats that approach the litter box and eliminate in its vicinity are communicating some dissatisfaction with the litter box.

Recommendations

- Pick out the litter box daily and clean it thoroughly once a week.
- Provide at least one litter box per cat, distribute in more than one location, and avoid high traffic or high noise areas.
- Move the food bowls away from the litter box.
- If the litter box is a covered type, provide an additional large, plain litter box.
- Offer unscented, fine-grained clumping type litter in a alternate box.
- Do not use a liner in the alternate box.
- Place an alternate box over sites of accidents. When in regular use, move the box several inches per day to a site more acceptable to the owner.
- Use deterrents at the site of inappropriate elimination. Possibilities include unacceptable substrate such as aluminum foil or plastic sheeting and odor deterrents such as citrus spray.
- For problems of long duration, it may be necessary to confine the offending cat in a small room, remote from the sites of elimination. Provide a litter box, food, and other necessities. When regular litter box use has been achieved or when well-supervised, the cat can be let out of the room for increasing periods of time.
- Behavior modification techniques include rewarding the cat for the use of the litter box with a favored treat. Punishment with a water pistol or sound alarm is effective only if initiated at the start of the behavior sequence. Punishment associated with sounds or movements by the owner will condition the cat to avoid the owner. Counterconditioning may be used by feeding or playing with the cat at elimination sites.

MEDICATIONS

DRUGS AND FLUIDS

For inappropriate urination, drugs usually are not indicated. Use environmental management plan. Cats that are urine spraying may benefit from pharmacotherapy to diminish arousal. Choosing a specific drug depends on a number of variables, including side effects, dosaging, familiarity with the drug, latency to effect, and cost (see [Tables 1](#) and [2](#))

CONTRAINDICATIONS

- Benzodiazepines are contraindicated in cats with hepatic disease, because a rare but potentially fatal condition, idiopathic hepatic necrosis, can develop spontaneously.
- Tricyclic antidepressants have potent antihistamine and anticholinergic side effects and are contraindicated in cats with cardiovascular abnormalities (particularly cardiac conduction disturbances) and [glaucoma](#).

PRECAUTIONS

- Psychotropic drugs have human abuse potential. These medications should be dispensed in small

quantities (not more than a 4-week supply) with refills available.

- Explain to the client the experimental nature of these treatments and common side effects (see [Table 1](#)). Such a discussion should be documented by a notation in the medical record or use of a dedicated release form.
- Although rare, benzodiazepines can cause idiopathic hepatic necrosis in apparently healthy cats.
- Use tricyclic antidepressants with caution in patients with urinary or fecal retention.

POSSIBLE INTERACTIONS

Benzodiazepine drugs can interact with cimetidine. Monoamine oxidase inhibitors can interact with tricyclic antidepressants and selective serotonin reuptake inhibitors.

ALTERNATE DRUGS

Synthetic progestins. The risk of serious side effects, including blood dyscrasias, [pyometra](#), mammary hyperplasia, mammary carcinoma, [diabetes mellitus](#), and [obesity](#), have diminished their once-common use. Dosage: 5 mg q24h 1-2 weeks, then taper gradually to 2.5 mg 2x/week.

FOLLOW-UP

PATIENT MONITORING

- The owner should keep a detailed log of all elimination patterns to provide more information on the problem and feedback regarding treatment success. Clients on a program of environmental modification need to make adjustments in order to respond to preferences shown by the cat.
- Tricyclic antidepressants exacerbate cardiac conduction disturbances in human patients. A screening electrocardiogram is recommended within 4 weeks of initiation of treatment.

POSSIBLE COMPLICATIONS

Expectations must be realistic. Immediate control of a long-standing problem of inappropriate elimination is unlikely. In many cases, the client has little patience left and treatment failure may result in the cat being euthanized, given away, or released outside.

ABBREVIATIONS

FELV = [feline leukemia](#) virus

FIV = [feline immunodeficiency](#) virus

References

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