

### **Other Causes**

Diseases such as diabetes and hyperthyroidism (overactivity of the thyroid gland) can cause lower urinary tract disease in cats.

Although they are much less common causes, FLUTD can also be caused by tumors of the urinary tract, congenital abnormalities (birth defects), or injury to the urinary tract or spinal cord.

### **What can I do at home to prevent future occurrences of FLUTD?**

Depending on the underlying cause for FLUTD, the clinical signs may never, or only occasionally, reoccur. However, recurrence is more common with FIC. To help reduce the chances of recurrence:

- Feed small meals on a frequent basis.
- Consult with your veterinarian about the best diet for your cat. Many commercial diets are acceptable, but some urinary conditions respond better to specialized diets. Canned food may be preferred.
- Provide clean, fresh water at all times.
- Provide an adequate number of litter boxes (usually one more than the number of cats in the household) with the type of litter that the cat(s) prefer.
- Keep litter boxes in quiet, safe areas of the house.
- Keep litter boxes clean—they should be scooped twice a day and the litter changed weekly (or more often as needed).
- Minimize major changes in routine.
- Reduce stress.

*For more information, visit,*  
American Veterinary Medical Association  
[www.avma.org](http://www.avma.org)

*Developed with assistance from:*  
Cornell Feline Health Center  
[www.vet.cornell.edu/FHC](http://www.vet.cornell.edu/FHC)



# Feline Lower Urinary Tract Disease



American Veterinary Medical Association  
1931 North Meacham Road, Suite 100  
Schaumburg, Illinois 60173 - 4360  
Phone: 847.925.8070 • Fax: 847.925.1329  
[www.avma.org](http://www.avma.org) • [AVMAinfo@avma.org](mailto:AVMAinfo@avma.org)



*Brought to you by your veterinarian and the  
American Veterinary Medical Association*

## What is Feline Lower Urinary Tract Disease?

Feline lower urinary tract disease (FLUTD) describes a variety of conditions that affect the bladder and urethra of cats. Cats with FLUTD most often show signs of difficulty and pain when urinating, increased frequency of urination, and blood in the urine. Cats with FLUTD also tend to lick themselves excessively and may urinate outside the litter box, often on cool, smooth surfaces like a tile floor or a bathtub.

While FLUTD can occur at any age, it is usually seen in middle-aged, overweight cats that get little exercise, use an indoor litter box, have little or no outdoor access, or eat a dry diet. Factors such as emotional or environment stress, multi-cat households, and abrupt changes in daily routine may also increase the risk that a cat will develop FLUTD.



### Major Signs of Feline Lower Urinary Tract Disease include:

- straining to urinate
- urinating small amounts
- frequent and/or prolonged attempts to urinate
- crying out while urinating
- excessive licking of the genital area
- urinating outside the litter box
- blood in the urine

Note that cats with a **urethral obstruction** (a blockage in the urethra, which is the tube that carries urine from the bladder and out of the body) will also show these signs but will pass little or no urine and become increasingly distressed. Urethral obstruction is seen more often in males than female cats due their longer, narrow urethra. *A urethral obstruction is an emergency and requires immediate veterinary treatment.* (See section on *Urethral Obstruction*.)

### How is FLUTD diagnosed?

Because FLUTD has many causes, it can be difficult to diagnose. Based on your cat's symptoms, your veterinarian will do a physical examination and most likely will run a urinalysis assessing urine pH and concentration and presence of crystals, bleeding, inflammation and infection. If the cause is still not identified, tests such as urine culture, x-rays, blood work and additional urine tests may be recommended.

### What are the causes of FLUTD?

#### **Urolithiasis (Urinary Stones)**

One possible cause of FLUTD is the formation of urinary stones, also called uroliths, in the bladder and/or urethra. These are collections of minerals that form in the urinary tract of cats. X-rays or ultrasound are usually needed to diagnose urinary stones. The most commonly seen uroliths are calcium oxalate and struvite (magnesium ammonium phosphate). While a special, stone-dissolving diet can be prescribed to dissolve struvite stones, calcium oxalate stones need to be removed



surgically. If the diet fails, or if the stones form again, then surgery may also be necessary for struvite stones. In female cats, it may also be possible for a veterinarian to help a cat pass stones by flushing its bladder with sterile fluids or remove small stones directly from the bladder using a cystoscope when the cat is under anesthesia. Your veterinarian may then recommend medication or dietary changes after surgery to help prevent recurrence.

#### **Urinary Infection**

Infection of your cat's urinary tract with bacteria, fungi, parasites or possibly even viruses can cause signs of FLUTD. Although bacterial infections are more common than fungal, parasitic or viral infections, they are still relatively uncommon in cats. If an infection is found, your veterinarian will probably look for another disease or problem that may have put your cat at risk of infection. For example, uroliths and diabetes can increase the risk of urinary tract infection.

In younger cats, bladder infections are a cause of FLUTD less than 5% of the time because the acid content and concentration of their urine prevents infection. Diseases such as kidney disease and diabetes are more common in cats older than 10 years of age, and alter the acidity and concentration of the urine—as a result, these cats are at higher risk of infection. Urinary tract infection is a relatively common cause of FLUTD in older cats, followed by uroliths.

The treatment for urinary infections often depends on the severity of the infection and the organism causing the infection, and may include fluid therapy, urinary acidifiers, and/or antibiotics.

#### **Urethral Obstruction**

The most serious problem associated with urinary function is when a cat's urethra becomes partly or totally blocked. These cats strain to urinate and produce little or no urine. It can appear that the cat is constipated and straining to pass stool, but straining in the litterbox is more often a sign of urethral obstruction. Urethral obstruction is a

potentially life-threatening condition caused either by urethral stones or by urethral plugs (the latter are made of a soft material containing minerals, cells, and mucus-like protein).

Male cats (neutered or intact) are at greater risk for urethral obstruction than females because their urethra is longer and narrower. This is a true medical emergency, and any cat suspected of suffering from this condition must receive immediate veterinary attention. Once the urethra becomes completely blocked, the kidneys are no longer able to remove toxins from the blood or maintain a balance of fluids and electrolytes in the body. Without treatment, death frequently occurs when these imbalances lead to heart failure—often in less than twenty-four to forty-eight hours.

Treatment of this condition involves dislodging the obstruction, usually accomplished by flushing a sterile solution through a narrow tube placed into the urethra. Once the obstruction is removed, further treatment depends upon the condition of the cat. Dehydration and electrolyte imbalances are treated with intravenous fluid therapy. Antibiotics may be given to prevent or treat infection, and drugs that help restore bladder function are sometimes recommended.

For cats who continue to experience urethral obstruction despite medical treatment, there is a surgical procedure called a perineal urethrostomy. Since side effects of this surgery can include bleeding, narrowing at the surgical site, urinary incontinence, and a greater incidence of urinary tract infection, it is usually considered only as a last resort.

#### **Feline Idiopathic Cystitis**

Feline idiopathic cystitis (FIC)—also called interstitial cystitis—is the most common diagnosis in cats less than 10 years of age with lower urinary tract disease. The disease is not fully understood and may involve several body systems in addition to the urinary system.

Feline idiopathic cystitis is a diagnosis of exclusion, meaning that it is a diagnosis made after all diseases that might cause similar signs are ruled out. There is no specific diagnostic test for FIC. Stress and diet changes can increase the risk of FIC. As many as 40–50% of cats will have another episode of FIC within one year, but veterinarians cannot predict which cats will have relapses. The disease can be chronic and very frustrating for the cat, the owner, and the veterinarian. The current goals of treating cats with FIC are to decrease the severity and frequency of episodes. There are numerous medical treatments that result in variable degrees of success but often the veterinarian will start by addressing any behavioral issues. This may include feeding only canned food and reduction of stress.

