



## What is Feline Lower Urinary Tract Disease (FLUTD)?

Feline Lower Urinary Tract Disease, or FLUTD, is a syndrome in which the lining of the bladder becomes inflamed or painful without any underlying causes, such as a urinary tract infection or bladder stone. Cats suffering from FLUTD will often experience frequent and painful urination, bloody urine, and may urinate outside the litterbox. Due to pain, cats with FLUTD may be reluctant to eat, act withdrawn, and be uninterested in their normal activities. In the most severe cases, cats with FLUTD are completely unable to urinate. This is a life-threatening emergency; if your cat cannot urinate, it should be seen by a veterinarian immediately.

The cause of FLUTD remains unknown, but is thought to be related to developmental changes that occur if a mother cat is under stress while her kittens are developing. Cats who suffer from FLUTD have an abnormal bladder lining that becomes inflamed during periods of stress. Stress for a cat can include everything from moving to shifts in the family dynamics to changes in diet or season.

Many urinary syndromes can cause symptoms identical to FLUTD, so it is important to rule out other causes of painful, bloody urination. Diseases such as urinary tract infections, bladder or kidney stones, or bladder masses all present similar symptoms as FLUTD. To make a diagnosis, a variety of tests may be recommended, including:

- **Urinalysis:** This test assesses the concentration of urine, screens for urine sugar and protein, and examines the urine for the presence of abnormal cells, crystals, or bacteria. Cats with FLUTD typically have very highly concentrated urine and many red blood cells, but usually do not have any bacteria present.
- **Urine culture:** This is a test in which we try to grow bacteria from a urine sample. This test is much more sensitive for diagnosing a urinary tract infection than a urinalysis. Cats with FLUTD will usually not have any growth of bacteria on their urine cultures.
- **Blood testing:** Blood testing can be used to assess the function of major internal organs such as the kidneys and the liver. Because bloody urine can sometimes be a sign of difficulty clotting blood or other bleeding disorders, the tests also tell us whether the blood is clotting normally.
- **Diagnostic imaging:** X-rays are recommended to screen for the presence of bladder stones, which cause irritation to the lining of the bladder and painful urination. However, not all stones, nor bladder masses, are visible on X-rays. Ultrasound of the bladder is a more sensitive test to look for bladder stones and masses.

### About FLUTD

- Cause is unknown
- Many conditions share the same symptoms as FLUTD
- Diagnostic testing is recommended
- May be treated by increasing fluid intake, managing pain, and reducing stress

Once all other potential causes of bloody, painful urination are ruled out, we are left with a diagnosis of FLUTD. Treatment for FLUTD involves three primary goals:

1. **Increased water consumption:** Cats in general are not very good drinkers, and most cats who are on a dry-food-only diet are chronically dehydrated. Highly-concentrated urine is more likely to promote bladder wall irritation. The easiest way to encourage adequate water intake is to feed cats a canned-food-only diet. For those cats that will tolerate it, we suggest adding additional water to make their food into a “slurry.” Some cats prefer drinking water from a moving source rather than a stagnant bowl, so consider purchasing a “pet fountain” to further encourage water consumption. There are also prescription diets specifically formulated to encourage production of dilute urine.



- 2. Pain control:** Bladder inflammation is very painful. To treat a flare-up of FLUTD, we may recommend medications such as opioid-type pain relievers or anti-inflammatory drugs, and a glucosamine/chondroitin supplement as a possible long-term pain management option. Normally, the bladder lining contains glucosamine and chondroitin (the same substances present in joint cartilage), and studies have shown that the bladders of cats with FLUTD are deficient in these compounds. Providing a glucosamine/chondroitin supplement, such as Dasuquin, may help restore these compounds to the lining of the bladder, making it more resistant to inflammation.
- 3. Stress management:** Stress is recognized to be an important component of FLUTD. The causes of stress in cats vary widely, but can include: poor relationships with other cats or dogs in the home, addition or loss of a family member, changes in schedules, or moving. For indoor-only cats, the Indoor Pet Initiative (<http://indoorpet.osu.edu/>) is a great resource for learning how to reduce your cat's stress. Feliway pheromone diffusers may also help to reduce anxiety, particularly in a multi-cat household. There are a number of anxiety-reducing supplements and herbs, and in severe cases we may prescribe anti-anxiety medications such as fluoxetine (Prozac).

FLUTD is a condition that cannot be cured, but in most cases the symptoms can be managed with the above recommendations. If you feel that your cat is not responding to treatment as expected, please do not hesitate to call your veterinarian for further advice.