

Lower Urinary Tract Disease in Cats  
(also known as FLUTD, Idiopathic Cystitis, Pandora Syndrome)  
Original Author: Wendy Brooks, DVM, DABVP  
Adapted by Lyra Read, DVM

The diseased lower urinary tract yields the same symptoms regardless of the cause. A cat with lower urinary tract disease may have some or even all of these signs.

- Bloody urine
- Straining to urinate (can easily be mistaken for straining to defecate)
- Urinating in unusual places
- Urinary blockage (almost exclusively a male cat problem)
- Licking the urinary opening (usually due to pain)

### **The Trick is Determining the Cause**

The urinary bladder, urethra, and urinary opening all constitute the lower urinary tract. It makes sense that effective treatment requires knowing the cause of the symptoms. The problem is that just about any inflammatory condition in the feline lower urinary tract creates the same collection of signs. Tumors, infections, bladder stones, etc. all create the same clinical picture.

### **What are the Possible Causes?**

It turns out that the age of the cat is tremendously relevant regarding which underlying causes are most likely. If we look at all cats with lower urinary tract symptoms, we find:

- 50% will not have a cause that can be determined despite extensive testing (meaning they have what is called idiopathic cystitis.)
- 20% will have bladder stones (females have a slightly higher incidence).
- 20% will have a urethral blockage.
- 1-5% will have a true urinary tract infection.
- 1-5% will have urinary tract cancer.

- 1-5% will have had trauma to the urinary tract (i.e. have been hit by a car etc.)
- 1-5% will have a combination of a bladder stone and an infection.
- The average age for symptoms is age 4 years.

If we separate the cats that are 10 years of age **or older** and only look at them, a different statistical picture emerges:

- 50% will have true urinary tract infections.
- 10% will have bladder stones.
- 17% will have a combination of infection and bladder stone.
- 7% will have a urethral blockage.
- 3% will have urinary tract cancer.
- 5% will not have a cause that can be determined despite extensive testing.
- 66% will be in some stage of insufficient kidney function.
- 5% will have urinary incontinence.

### Sorting Out Causes

Testing is used to help sort patients into the correct group. A urinalysis is commonly performed. With a 50 percent incidence of infection in older cats, a urine culture would be extremely important for a cat age 10 or more but not as important for younger cats where the infection is rare. In younger cats, a urinalysis is helpful to look for the typical blood and crystals of idiopathic cystitis or to pick up the occasional bladder infection.

Radiographs (in cats young and old) to rule out bladder stones are a good idea as they will otherwise go undetected if imaging is not considered. Ultrasound is also available and can help screen for stones as well as tumors.

Notice the large percentage of young adult cats for whom **no clear underlying cause** can be identified. For these cats, there are many theories on how to proceed.

It is critical to note that lower urinary symptoms in a male cat can indicate a urinary blockage, which is an emergency situation.

**If you are not sure if your cat can express urine, assume it could be an emergency and call your veterinarian's office at once.**

See more about [prevention](#).

FLUTD is a complex disease, so knowing the cause of the disease guides the treatment. In other words, there is no common treatment or management. Your best source of information will come from your veterinarian as they know you and your cat's circumstances.

### **What about FIC?**

Feline idiopathic cystitis (FIC for short) is a common cause of FLUTD in younger cats. So what is FIC? It turns out to be a defect in the way a cat handles stress. An easy analogy is a human who gets a recurring upset stomach from stress. Similarly, cats get a recurring upset bladder from stress. Not every cat is susceptible to FIC; some cats are simply neurologically wired to have issues with how they handle stress.

The urinary bladder is lined with glycoproteins called PSGAGs. This material basically insulates the tissue of the bladder from the urine it contains. Urine can vary greatly in pH and can contain abrasive crystals in addition to assorted toxins and irritants that the kidneys have removed from the bloodstream and concentrated. All of these unpleasant materials are present in urine, so it is a good thing to have a layer of insulation protecting the actual tissue of the urinary bladder.

If the lining of the bladder becomes patchy, the tissue of the bladder is directly exposed to the urine, and inflammation results. The bladder PSGAG layer becomes patchy when the cat is experiencing anxiety. For decades, the management of FIC focused on reducing urinary crystals, changing urinary pH, and improving the PSGAG layer of the bladder. What seems to be the most effective approach is addressing the stress that caused the problem in the first

place but even doing this is a preventive measure. Dealing with an active episode of FIC is another matter entirely.

### **The Active FIC Episode: Diagnosis and Treatment**

When a young adult cat has FLUTD symptoms, some effort is made to rule out more specific causes such as bladder stones and bladder infections. These conditions have specific approaches and can be ruled in or out by tests. There is no test for FIC. The diagnosis of FIC is based on negative tests for other more definable conditions and the clinical picture of the patient (young adult cat, recent stress in history, anxious temperament, past history of similar symptoms, etc.). Most young adult cats with FLUTD symptoms are believed to have FIC.

An episode of FIC typically lasts 1-2 weeks. Despite decades of research on this condition, no treatment has emerged that will shorten the duration of the episode. All we can do is manage the pain and urinary discomfort until the episode passes.

### **Anti-Spasmodics and Tranquilizers**

These medications help the painful urethral spasms that occur with the inflammation associated with the episode. They also help the urethra dilate so that urine can pass. Typical medications might include [acepromazine](#), phenoxybenzamine, [diazepam](#), or [prazosin](#).

### **Analgesics (Pain Medications)**

These medications may be exclusively pain relievers (analgesics), like [buprenorphine](#), or may include medications like those mentioned above that reduce nerve signals or offer tranquilizing properties like [gabapentin](#) or [acepromazine](#), respectively. In some cases, acepromazine or gabapentin is combined with an analgesic for greater pain relief.

**Unfortunately, FIC is a condition where we are much better at preventing future episodes than we are at treating an active episode but before we go**

on to prevention, we need to review one more acute and very serious FIC Complication: urinary blockage.

### The Blocked Male Cat: An Emergency Situation

The male cat's urethra is extremely narrow and not equipped to handle mixtures of normal urinary crystals and increased mucus secretion from inflammation. The crystals and mucus combine into a plug and can [block the male cat's urinary tract](#). If urine cannot pass, toxins build up, and [death occurs](#) in a matter of days.

**If the cat develops a full or partial urinary obstruction during the episode, THIS IS AN EMERGENCY and the obstruction must be relieved at once. If dangerous urinary toxins have built up, intravenous fluid therapy is needed to reverse the life-threatening situation. This is almost exclusively a male cat situation.**

### Why Do only some Cats Get FIC?

We know that cats that get this syndrome have a unique imbalance in the way their brain controls stress hormones. These cats are neurologically different in a way that makes them extra reactive to any change in their world, extra anxious, and extra sensitive to pain relating to the back half of their bodies. They are different from other cats, but as long as they live in a predictable environment with the same food, same schedule, private food, rest and toilet resources, etc., you might never know you had a sensitive feline in the family. Typical or common triggers for FIC might include:

- Stress among the humans in the home (final exams, arguments, sickness, etc)
- Someone (or another animal) moving in or out
- Construction in the home or outdoors
- Weather change or earthquake
- New furniture
- Moving to a new home
- Changing to a new brand of food
- Humans changing schedules as to when they are home.

FIC cats are very sensitive and urinary signs can flare up over events that humans frequently discount or pay no attention to. Most pet owners, however, are aware that the cat in question has a personality that is somewhat anxious or sensitive.

## **Preventing Future Episodes**

### **Environmental Enrichment**

Many people are surprised to find that environmental enrichment is effective in preventing future FIC episodes. You might think your cat has plenty of toys and seems relaxed and well-adjusted, but the reality is that the cat's natural environment of living in the forest and hunting/eating mice regularly throughout the day is a far cry from sitting on a sofa, eating processed foods, and eliminating waste in a plastic box filled with clay. Most cats are fine with the domestic lifestyle, but the FIC cat is special and has special sensitivity. Stress can be minimized by allowing choices for the cat in terms of areas for playing, resting, eating, and eliminating. Just providing more toys is unlikely to be adequate. Most of the time the cat in question needs a private area for "me time" (separate feeding, rest, and/or toileting area).

The American Association of Feline Practitioners has published a set of guidelines for an [enriched feline environment](#). The bottom line is:

- Each cat should have the opportunity to play with the owner or with another cat if desired.
- Each cat should be able to move freely about its home including climbing if desired.
- Scratching posts should be available.
- Toys should be regularly rotated/replaced.
- Each cat should be able to choose warmer and cooler areas within the home.

- There should be a litter box for each cat, ideally plus one extra. Litter boxes should be located in well-ventilated areas and should be kept clean. Boxes should be washed out weekly with a minimally scented detergent. Unscented clumping litter seems to be best. If there is more than one floor in the home, there should be a box on each floor.
- Litter boxes should be private enough that other animals will not be bothering the cat and loud appliances will not startle the cat during litter box use.
- Each cat should have his own food and water bowls. Feeding/watering stations should be safe so that other animals (like dogs) will not be startling the cat. Bowls should be washed daily.
- The brand, flavor, or format of the food (dry vs canned) should be kept fairly constant. If it is changed, allow the cat a choice of new food vs. old food at least for a while before changing over and do not change more than once a month.

Another excellent resource is the [Indoor Pet Initiative](#) sponsored by the Ohio State University.

### **Canned Food and Urinary Formulas**

For decades, FIC was felt to be dietary in origin. In fact, when feline commercial foods were reformulated in the 1980s to create a more acid urinary pH, the incidence of feline cystitis dropped spectacularly. Urinary crystals (usually [struvite](#)) are important in the male cat syndrome of urinary obstruction which is a complication of FIC and scientific studies have found benefits to using urinary diets to prevent future FIC episodes.

Studies seem to indicate that canned urinary formulas are more successful than dry. The increased water content of canned food is usually credited for this, but it has also been proposed that it is the aroma, sight and sound presentation and owner interaction involved in feeding canned that makes the difference. Still, increasing water consumption is frequently recommended to decrease future episodes of FIC.

Some cats may benefit from medication and/or supplements for anxiety (see our [house-soiling](#) information).

### **What if My Cat Doesn't Seem to be Anxious?**

If your cat does not seem to fit the picture or there has been no obvious stressor at home, keep in mind the FIC diagnosis is exclusionary, which means other tests are negative. Be sure diagnostics have not been skipped (urinalysis, ultrasound of the bladder etc.). FIC is the most common diagnosis in younger cats with lower urinary symptoms but it is best not to play the odds and miss a bladder infection or stone.

**Again, male cats with FIC can develop a life-threatening obstruction that is an emergency.**

**If you have a cat who is straining in the litter box, urinating in unusual places, or demonstrating any of the signs mentioned, see your veterinarian promptly.**