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## FELINE LOWER URINARY TRACT DISEASE

Feline lower urinary tract disease, or **FLUTD**, is the term that describes the following group of clinical signs:

- bloody urine
- straining to urinate (can easily be mistaken for constipation)
- urinating in unusual places
- urinary blockage (almost exclusively a male cat problem and occurs in 20% cases)
- licking the urinary opening (usually due to pain)

FLUTD used to be called feline urologic syndrome (FUS) or simply cystitis (meaning literally inflamed bladder). Because the syndrome can have many possible causes, it was renamed to discourage the idea that the clinical signs seen represent one disease with one cause. It is not usually a simple bladder infection either so antibiotics are rarely going to solve the problem.

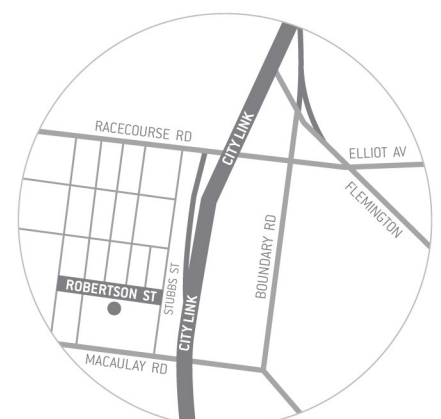
### **What Causes FLUTD?**

Central to treating a cat with FLUTD is determining which of many possible causes is present. It turns out that different diseases are common in different age groups of cats with this syndrome.

The average age of a cat with FLUTD is 4 years. Of all cats with FLUTD:

- 50% will not have a cause that can be determined despite extensive testing
- Up to 20% will have bladder stones
- 1%-5% will have a true infection – much higher in cats over 10 years of age
- 1%-5% will have a urinary tract cancer

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- 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 - higher in cats over 10 years of age

Older cats can also have kidney failure and urinary incontinence to further confuse the diagnosis.

### ***How Can These Possible Causes Be Sorted Out?***

In younger cats, there is a 50% chance that testing will not find a definite cause. Given this, testing beyond an examination and urinalysis may not be performed unless the symptoms recur in your cat.

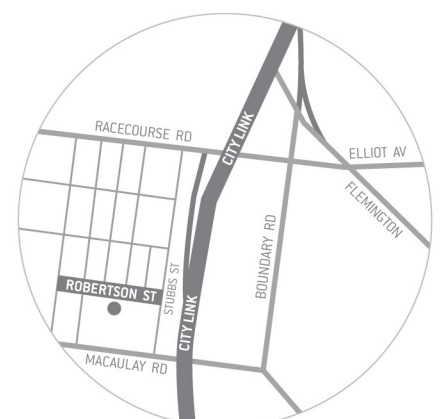
In older cats, it is more important to look for a diagnosis. A blood panel, urinalysis and urine culture will detect cats that have urinary tract infections or those that have kidney failure. Radiographs or an ultrasound may be required to identify any bladder stones.

### ***What Is a Reasonable Approach to Treatment?***

The approach depends on which diagnosis has been reached. Urinalysis will show up cats with crystals, some cats with stones and cats with have bacteria in their urine.

- If your cat has bacteria noted in his or her urine on initial urinalysis, a sample will be submitted for culture and sensitivity to try to identify the bacteria involved. This also means we are sure to treat with an effective antibiotic.
- If your cat has bladder stones that may cause obstruction again, surgery may be needed to remove these stones.
- If your cat has a urethral blockage or partial blockage (almost always male cats) he will need to have emergency treatment to pass a urinary catheter.
- If your cat has struvite urinary crystals but is not blocked, medical therapy and a diet change may be advised.

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### ***Is all FLUTD caused by crystals in the urine?***

We used to believe struvite crystals in the urinary bladder were the primary cause of FLUTD. The crystals are irritating to the bladder and in some cases lead to increased mucus production in the urinary lining. Clumps of crystal and mucus can cause obstruction in male cats. This discovery led to mass reformulation of commercial cat foods in the 1980s and 1990s so that commercial cat foods no longer promote the alkaline urine associated with struvite formation. As a result, the incidence of FLUTD dropped dramatically.

But now that most cat foods have been reformulated, how should the finding of struvite crystals be interpreted?

- We know that FLUTD cats have struvite crystals in their urine as often as normal cats do.
- We know about half of cats with FLUTD have no crystals in their urine whatsoever.
- We know that struvite crystals are a major portion of urethral plugs removed from obstructed cats.

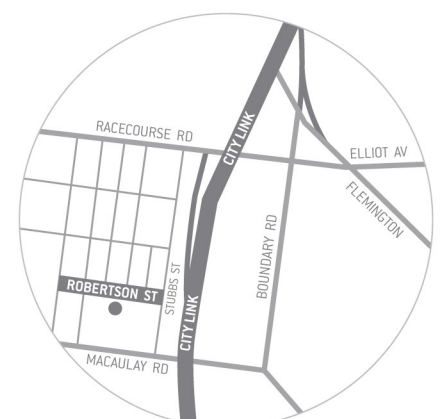
It appears that the resolution of the crystals in a cat with a FLUTD episode corresponds to the resolution of the episode, so although the true significance of the crystals remains unclear, the general feeling is that steps should be taken to eliminate them. It is crucial to realize that diet may not be a significant cause of FLUTD in a cat eating a reputable brand of commercial cat food and other prevention methods are often needed.

### ***Treatment Plans Commonly Used***

**Increase Water Consumption:** Cats like fresh water so multiple bowls that are changed frequently are a good start. Many cats prefer running water so a dripping tap with a bowl underneath or a water fountain (available in some pet shops) can also be used.

**Reduce Stress:** Stress is felt to be a significant cause of this syndrome. Cats frequently develop FLUTD after a move or the addition of another cat, dog or person to the

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household. Anti-anxiety medication has been successful for some cats with recurrent FLUTD.

**Anti-spasmodics and Tranquilizers:** During the recovery period after an episode of blockage these medications are commonly used. They 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.

**Antibiotics:** In most instances antibiotics are not required. They are only indicated if an infection is known (or highly suspected) to have contributed to the episode of FLUTD and a urine sample is usually obtained prior to usage.

**Anti-Inflammatories:** These medications may help with the swelling and pain especially if your cat has had a urinary catheter in place for some time.

**Diet changes:** Prescription diets are available to reduce the formation of struvite and other types of crystals in the urine. These diets may also help to reduce the recurrence of FLUTD even when crystals are not involved in the cause.

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