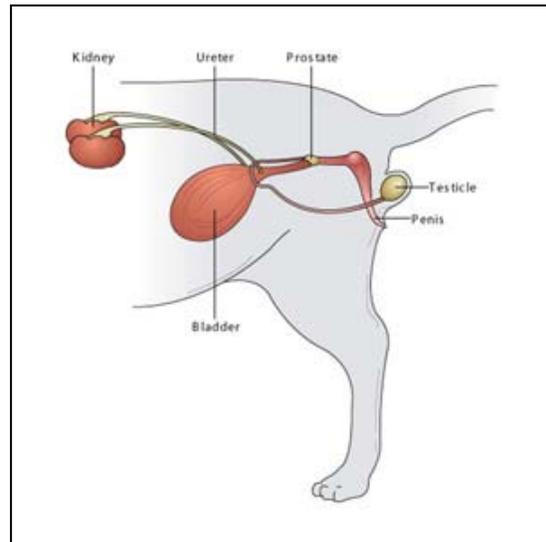


Feline Lower Urinary Tract Disease

What is feline urinary tract disease?

Feline Lower Urinary Tract Disease (FLUTD) is a term used to describe a set of clinical signs associated with abnormal urination in cats. It is more correct to call the condition Feline Idiopathic Lower Urinary Tract Disease (iFLUTD) to indicate that this is an exclusionary diagnosis made only after all the known causes have been eliminated.

It is important to understand the difference between iFLUTD and Feline Urologic Syndrome or FUS. FUS is simply a description of the syndrome which manifests by the clinical signs of straining to urinate, with frequent attempts at urination, and partial or complete urethral obstruction. FUS is not a diagnosis but a term used to describe the cat's condition, just as you would say a cat is itchy or is vomiting. iFLUTD is a diagnosis made once all of the common or known causes of the clinical signs have been eliminated.



What are the clinical signs of feline lower urinary tract disease?

The most common clinical signs of iFLUTD are the same as those of FUS:

- straining to urinate
- Bloody or discolored urine
- Frequent urinations
- Urinating in unusual locations
- Urethral obstruction or the inability to urinate

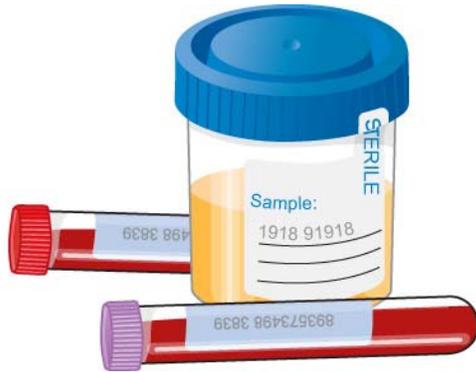
What causes feline lower urinary tract disease?

In cases of Feline Idiopathic Lower Urinary Tract Disease, there is no known cause. The conditions that should be ruled out include:

- Bladder stones and urethral plugs
- Bladder infections
- Trauma

- Neurogenic disorders that alter normal urination by affecting the nerves and muscles of the bladder
- Anatomic abnormalities such as urethral strictures
- Neoplasia (cancer or benign tumors of the urinary tract)

Once all of the common causes of abnormal urination have been eliminated, a diagnosis of Feline Idiopathic Lower Urinary Tract Disease may be made.



How is iFLUTD diagnosed?

iFLUTD is diagnosed by performing tests to eliminate the known causes of abnormal urination. These tests include:

Thorough medical history and physical examination – especially pay attention to any changes in environment, feeding, stress, etc.

- Blood tests – complete blood cell count (CBC) and serum chemistries

- Complete urinalysis
- Urine culture and antibiotic sensitivity tests
- Abdominal radiographs and possibly abdominal ultrasound or contrast radiographic studies
- Cystoscopy or endoscopic examination of the urethra and bladder
- Bladder biopsy

Your veterinarian will formulate a diagnostic plan based on your cat's individual clinical signs and needs.

What is the treatment of iFLUTD?

Since the exact cause of iFLUTD is unknown, treatment will be pursued based on your cat's needs. Drug choices include:

- Propantheline
- Amitriptyline
- Butorphanol
- Phenoxybenzamine
- Pentosan polysulfate sodium

Corticosteroids, DMSO, antibiotics and methenamine have not been shown to be beneficial in the treatment of iFLUTD. Your veterinarian will develop a treatment plan based on your cat's needs.

What is the prognosis for iFLUTD?

Most cases of iFLUTD improve without medical intervention in four to seven days. However, recurrence of clinical signs is common. Medical treatment may help reduce the recurrence or improve clinical signs. The number of recurrences tends to decline as the cat gets older. While a frustrating disorder for both the cat and owner, iFLUTD rarely causes long term or serious consequences.

What is cystitis?

Cystitis is a general term referring to inflammation in the urinary bladder. The term cystitis does not imply a specific underlying cause.

In cats, diseases of the lower urinary tract (bladder and urethra) are often grouped under the term feline lower urinary tract disease (FLUTD). This is due to the fact that it can be difficult to distinguish between diseases of the bladder and urethra, and many diseases will affect both structures. It is more correct to call the condition Feline Idiopathic Lower Urinary Tract Disease (iFLUTD) to indicate that this is an exclusionary diagnosis made only after all the known causes have been eliminated.

What causes FLUTD?

There are a vast number of potential causes of FLUTD, but many cats experience severe inflammation of the bladder and/or urethra without an identifiable cause. This is known as 'idiopathic' or 'unknown' FLUTD. These idiopathic cases must be differentiated from other potential causes so that appropriate treatment can be given. Some of the potential causes of FLUTD are listed below:

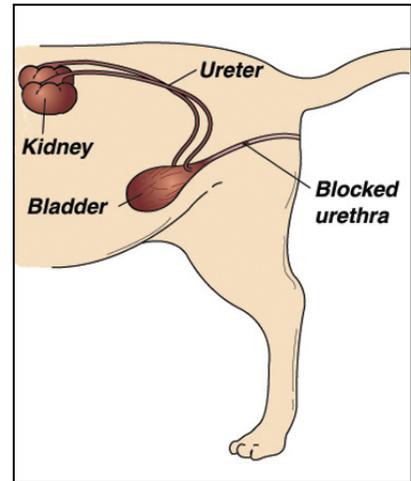
- Idiopathic - unidentifiable cause
- Urinary calculi or bladder stones
- Bacterial infections
- Neoplasia - tumor
- Anatomical abnormalities

Urethral plugs - blockage of urethra with a mixture of crystals or small calculi/stones and inflammatory material

What further tests are required to diagnose the cause of FLUTD?

When clinical signs are persistent or recurrent, a number of investigations may be required to differentiate idiopathic FLUTD from the other known causes of urinary tract inflammation. These diagnostic tests include:

- Laboratory analysis of a urine sample
- Bacterial culture of a urine sample
- Blood samples to look for other evidence of urinary tract disease or other systemic disease
- Radiographs (x-rays) or ultrasound examination of the bladder and urethra



The information from these tests should help to identify a specific treatable underlying cause if present.

What is the treatment for FLUTD?

This depends on the underlying cause. For example:

Cases of idiopathic disease may respond to treatment with anti-inflammatory or analgesic or pain-relieving drugs, but it is crucial that you *only* use drugs specifically prescribed by your veterinarian, because many human products are extremely dangerous to cats.

- Bacterial infections of the lower urinary tract usually respond well to antibiotic therapy.

If a cat develops a blocked urethra, emergency treatment is required to remove the blockage, which may require flushing of the urethra while the cat is given a short-acting anesthetic. Urethral obstruction occurs almost exclusively in male cats.

If bladder stones or *uroliths* are present, they may have to be removed surgically or, depending on their type, they may be able to be dissolved by using a special diet or dietary additive

There is no universal treatment for FLUTD. Each case has to be investigated to determine the underlying cause, and then the treatment has to be tailored to the individual cat. Sometimes despite appropriate tests and treatment clinical signs may still recur, requiring further therapy.

How can FLUTD be prevented?

It is impossible to completely prevent diseases of the lower urinary tract from occurring. However, FLUTD is more common in cats that have lower water consumption and in cats that are inactive and obese. All these factors may relate, at least in part, to the frequency with which a cat urinates. Weight control and encouraging exercise may be of some help in preventing FLUTD.

If a cat develops urinary calculi or crystals, the feeding of special diets may help prevent FLUTD.

OTHER INSTRUCTIONS: