



## Feline Lower Urinary Tract Disease (FLUTD)

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

FLUTD consists of a group of conditions, many of which cause inflammation of the lower urinary tract. Affected cats frequently show signs similar to those of cystitis in humans. In some cats the formation of crystalline material in the lower urinary tract can result in obstruction to the passage of urine. This is more common in male cats, because the male urethra (the tube that carries urine from the bladder to the outside) is much narrower than in the female. Complete obstruction can cause irreversible damage to the kidneys and is life threatening unless quickly treated.

- Recognising the signs of FLUTD:

1. Excessive straining to pass urine
2. Only small amounts of urine passed
3. Increased frequency of urination
4. Blood in the urine
5. Urinating in strange or unusual places
6. Behavioural changes: Restlessness, listlessness, hiding or refusal to eat.

**IMPORTANT: A male cat that is not urinating freely requires immediate veterinary attention, because a urinary blockage may be the cause, this could lead to acute renal failure and death if not treated!**

- Causes of FLUTD:

**Idiopathic:** In the majority of cases no underlying cause can be found which would cause the bladder inflammation. Current thoughts are that perhaps 'stress' could play a leading role. A layer of special protein protects the delicate lining of the bladder. It has been suggested that when a cat becomes stressed this protein layer becomes damaged allowing urine to come into direct contact with the sensitive bladder lining. This causes pain and inflammation and many of the signs associated with FLUTD.

**Bladder stones:** These can vary greatly in their mineral content, some can be treated with diet changes, and others need to be removed surgically.

**Urethral plugs:** Urethral plugs occur commonly and are important because they are associated with urethral obstruction. They consist of products leaked from an inflamed bladder wall and urine crystals.

**Infectious causes:** Bacterial infection is a rare cause of FLUTD and is often secondary to other underlying causes. Older cats, particularly those with chronic renal failure/diabetes/hyperthyroidism have an increased risk of bacterial infection.

**Bladder tumours:** This is more common in older cats.

**Anatomical defects:** Defects in the urinary tract may allow urine to pool and be retained.

- **Risk Factors for Development of FLUTD:**

**Stress:** Stress plays a key role in the development of FLUTD and is identified as a 'flare factor'. Recognised stressors include abrupt changes in diet, environment or weather, overcrowding, owner stress, or the addition to the household of new pets or people. Stress associated with urination can be particularly significant (e.g. an unsuitable position or content of the litter tray, competition for the litter tray, or aggressive behaviour by other cats while the cat is trying to use the litter tray or when urinating outdoors). It is essential to reduce the level of stress to which the cat may be exposed. Providing a safe clean area in which the cat can urinate, reducing overcrowding or bullying, and reassuring the cat as much as possible may help to achieve this.

**Food:** High levels of certain minerals in food can increase the chance of crystal formation that is involved with FLUTD. The minerals magnesium and phosphorus are components of the most common crystal type-struvite; therefore it helps to keep these minerals as low as possible in the food. The food a cat eats also influences the acidity of its urine. Struvite crystals tend to form in more alkaline urine, and other types such as calcium oxalate tend to form in association with more acidic urine. Therefore feeding a food that results in the proper pH is essential to reduce crystal formation.

**Water intake:** Inadequate water intake can predispose a cat to FLUTD. Cats fed a wet as opposed to dry diets appear to be at less risk of developing FLUTD. Cats with recurrent FLUTD fed on a dry diet are often encouraged to wean onto wet cat food or soak the dry food in an attempt to increase overall water intake.

**Behaviour:** Lack of exercise, confinement indoors, reduced water intake, and even dirty litter trays may cause your cat to urinate less often. Low frequency of urination can play a role in encouraging the development of FLUTD.

**Body Condition:** Excessive weight, because of a combination of dietary and environmental factors, also predisposes to FLUTD.

**Sex:** Although both sexes are equally likely to develop signs of FLUTD, urinary obstruction, because of plug formation, is more common in neutered male cats.

- **Diagnosis:**

Once the vet has ruled out the possibility of urethral obstruction it is likely that they will want to perform a number of diagnostic tests, these may include the following:

1. Urine sample collection for detailed analysis in house
2. Urine culture and sensitivity testing
3. Abdominal x-rays
4. Abdominal ultrasound scans
5. Bladder biopsies

Initially however an in house urine sample is likely to be the only test required, others may only be required if the condition becomes recurrent or not responding to initial treatment.

- **Treatment:**

Treatment often involves a combination of approaches and consequently your cat may need several different types of medication, in addition management changes are often required at home.

<b><i>Antibiotics:</i></b>	These will only have a beneficial effect if there is a bacterial infection present.
<b><i>Anti-inflammatory Drugs:</i></b>	These are used to provide pain relief as well as to reduce bladder inflammation.
<b><i>GAG supplementation:</i></b>	These are used to help replace the damaged bladder surface and also have pain relieving and anti-inflammatory effects.
<b><i>Pheromone Spray/Diffusers:</i></b>	These are used to try to relieve stress in cats; often identifying the underlying cause of stress is not always straightforward.
<b><i>Dietary management:</i></b>	Prescription diets if appropriate can help limit the formation of crystals within the urine and help return the urine to a normal acidity level. Many now also contain supplements to help control stress.
<b><i>Antispasmodics:</i></b>	Often drugs will be dispensed to reduce urethral spasm, these are frequently required in male cats that have been blocked and subsequently relieved via a urinary catheter.

***Management factors:***

- In addition to these medications it is also important to encourage increased water intake and frequency of urination. Urinary retention and concentrated urine predispose cats to crystal formation. It is advisable to encourage the cat to drink as much as possible, ensuring that fresh water is available at all times, particularly in the places where the cat spends most of its time.
- If a cat lives in a multi-cat household where a litter tray is used, it can be beneficial to increase the number of litter trays available or increase the frequency of tray cleaning. Some cats also feel more secure using a covered litter tray. Experimenting with the type of litter used can also have a positive effect, as some cats will urinate more frequently with a different type of litter.
- If your cat is found to be overweight then they should be started on a weight management program, dieting cats can be difficult and results are best achieved by attending a weight clinic with our dedicated nursing team.
- Trying to identify the causes of stress may prevent recurrent symptoms. Allowing nervous cats the ability to go upstairs or retreat when visitors arrive, etc. has been shown to be beneficial in some cases.
- Whatever regime is chosen, it is essential to monitor the urine regularly (ideally monthly) for acidity, concentration and presence of crystals. To ensure the accuracy of the results it is important that a fresh sample is obtained.