

# Cystitis in Cats – Causes, Symptoms and Treatment

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June 17, 2017

[Causes](#) [Symptoms](#) [Diagnosis](#) [Home treatment](#) [Medical treatment](#) [Prevention](#)

## At a glance:



**About:** Cystitis is an inflammation or infection of the bladder, it is seen more frequently in female cats.



**Symptoms:** Frequent trips to the litter tray, straining to urinate, blood in the urine, genital licking and urinating outside the tray.



**Diagnosis:** A thorough physical examination along with a medical history. Presenting symptoms, urinalysis, bacterial culture and ultrasound.



**Treatment:** Dietary changes, increasing water consumption, antibiotics and in some cases medications. Emergency care may include catheterisation, fluid therapy and surgery.

Cystitis is the inflammation and/or infection of the bladder and a common cause of lower urinary tract disease in cats.

It may precede or be secondary to urolithiasis (stones in the urinary tract). [1] It can be acute (sudden onset) or chronic (long-lasting). It is a common cause of frequent and/or inappropriate urination in cats, particularly females.

Cats are more prone to developing cystitis than dogs, and it is seen more frequently in females than males. This is due to their shorter urethra which makes it easier for bacteria to ascend from the perineum into the bladder.

## Causes:

There are several possible causes of cystitis including:

- Feline Idiopathic Cystitis (FIC) – No known cause. This is more commonly seen in cats under 10 years of age.
- Bladder stones are one of the most common causes of cystitis in cats, accounting for up to 15% of all cases.

- Bacterial infection. More common in senior cats over ten years of age.
- Diabetic cats are at greater risk of developing cystitis as higher levels of glucose and protein in the urine promote bacterial growth. Decreased white blood cell activity may also play a role.
- Long-term use of steroids can also lead to cystitis due to lowered immunity.
- Infrequent urination is another cause of cystitis. Cats may delay urination if they are stressed, avoid urinating due to poor weather (and reluctance to go outdoors) or have dirty litter trays, trays located in inappropriate areas. Holding onto the urine can cause it to stagnate, which can help promote the growth of bacteria.
- Senior cats often drink less water than they should, which also leads to concentrated urine, making a perfect environment for bacterial growth.

## Symptoms:

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- Straining to urinate, only letting out a few drops (if any) at a time. This can sometimes lead the owner to believe that the cat is constipated. You may notice your cat frequently visiting the litter tray.
- Blood in the urine.
- Excessive genital licking, way beyond normal self-cleaning.
- Sudden halt in litter box usage.
- Crying in the litter box. You may hear your cat crying near, around or in the litter box. This also involves the cat attempting to urinate and little or no urine is passed.
- Urinating in places other than the litter box, such as the bath or floor.
- Smelly urine due to infection.

It is extremely important to note that difficulty urinating is a medical emergency and you should take your cat to the veterinarian immediately. Failure to act quickly can result in death. If your cat can't urinate, toxins quickly build up, causing uremic poisoning.

## Diagnosis:

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Your veterinarian will be able to give a tentative diagnosis based on physical examination and signs, such as straining to urinate and licking genitals. He will feel the bladder through the abdomen, the bladder may feel large, full and distended or it may feel small and thickened.

He may also investigate further by performing the following tests:

- Urinalysis – May reveal concentrated urine which is alkaline, red blood cells, white blood cells, bacteria, and sediment.
- Ultrasound – May reveal a thickening of the bladder and the presence of bladder stones or tumours (rare).
- Bacterial culture – If bacteria is found to be present in a properly collected (urine should be collected via *cystocentesis*, which involves inserting a fine needle through the abdominal wall and into the bladder, this prevents contamination of the sample) urine sample then your veterinarian may choose to perform a bacterial culture to identify the type of bacteria. This enables your veterinarian to determine the best type

of antibiotic to treat the infection.

## Home treatment:

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Treatment depends on the cause and severity of the condition. Finding and treating the underlying cause if possible.

- **Increase fluids:** As stone build up is caused by urine which is too concentrated (and alkaline) it is important to try and get more fluids into your cat, to reduce the concentration of the urine. It is also beneficial to aim for a pH below 6.5. pH in a cat's urine usually ranges from 5.5 to 8.0, but diets which result in < 6.5 decreases the chances of struvite crystals forming.
- **Diet:** Moisten dry food or change to canned/raw food. Dry food contains approximately 10% water, whereas canned or raw food contains approximately 70% water. Cystitis has been shown to recur less often in cats fed a canned diet.
- **Avoid fish flavoured food.** Feed a diet which increases the acidity of urine. There are special diets which are created to increase thirst. When I was dealing with a cat with FLUTD several years ago it was fairly widespread that magnesium was quite possibly a contributing factor to the formation of struvite crystals, and therefore a low magnesium diet could help. However, it appears that this is believed to not be the case.\*1
- **Urine pH:** Try to feed a diet which keeps the urine pH below 6.5. Unfortunately, long-term use of an acidifying does carry some risks, one of which is the increased chances of developing calcium oxalate urolithiasis.

## Medical treatment:

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Severe cases will need to be treated on an in-patient basis and may include:

- **Urine:** If your cat is completely blocked then your veterinarian may extract urine by placing a syringe through the abdomen and directly into the bladder and draw out the urine. This is a fast and effective way of emptying out the bladder in an emergency situation. Alternatively, he may choose to catheterise the cat immediately. See below for info on catheterisation.
- **Fluid therapy:** This form of therapy is often used before catheterisation is attempted. It involves the administering of fluids to the cat in order to continue to flush out the cat's urinary system (particularly the bladder).
- **Catheterisation:** This is the system by which a catheterisation needle is inserted into what is called the Cephalic vein. This vein is located in one of the front legs of the cat. After the intravenous needle is placed in the front leg of the cat it is wrapped. A urinary catheter is also placed in the cat's urethra. This helps re-hydrate the affected cat and also helps flush out the crystals that have formed, as well as the excess potassium. Catheterisation on a cat takes place while the cat is under anaesthesia.
- **Surgery:** A procedure is performed on male cats who experience repeated bouts of cystitis or urinary blockages. It is also performed on cats who's systems were not fully flushed during the catheterisation process. This surgery is known as a perineal urethrostomy and involves partial amputation of the penis to the point where the

urethral opening is larger. This will help reduce the risks of blocking, although it is still possible a small number of cats will become blocked even after the perineal urethrostomy.

- **Antibiotics:** If the cause is determined to be bacterial, antibiotics will be prescribed.
- **Amitriptyline**, which is an antidepressant and analgesia (painkillers) are two examples of medications which may help a cat with cystitis.
- **Corticosteroids** may be prescribed for FIC to reduce inflammation.

## Prevention:

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- Keep stress to a minimum. This includes providing your cat with a well-defined schedule, cats don't like change.
- Don't change types of cat litter suddenly. Cats like routine, if you make sudden changes your cat doesn't like, they may either find another place to go to the toilet or hold on to their urine until they are desperate. It is far better for your cat's bladder and urinary tract health if they don't do this.
- Make sure there are enough litter trays in your home. A rule of thumb is one tray per cat, plus one extra. So if you have two cats, you should have three trays. Litter trays should be cleaned of solids at least once a day and completely changed at least once a week.
- If your cat goes to the toilet outside, he should still be provided with a litter tray indoors also, so that he can go to the toilet during periods of inclement weather.
- Providing plenty of clean, fresh drinking water. This should be changed daily.

## References:

[1] The Cornell Book of Cats (p 227) – Edited by Mordecai Siegal.