

# 8 Signs Your Dog May Have a Urinary Tract Infection

Greater than 1 in 7 dogs will develop a bacterial UT infection during their lifetime. Certain dogs, especially females, are at greater risk. Know the signs that can indicate a potentially serious issue with your dog's urinary tract or bladder so you know what to do when they arise.

Analysis by [Dr. Karen Shaw Becker](#)

## STORY AT-A-GLANCE

- Urinary tract infections (UTIs) are relatively common in dogs, and E. coli is the culprit in about half of all canine bacterial UTIs
- UTIs are usually the result of a change in a dog's immune defenses that allows bacteria to proliferate and persist in the urinary tract
- There are several symptoms that occur with UTIs in dogs; a urinalysis is required to confirm the diagnosis, and a culture and sensitivity test is needed to check for the presence and type of bacteria involved
- The biggest reason UTIs do not resolve is the wrong antibiotic is selected and/or the length of therapy is inadequate
- To prevent UTIs in your dog, it's important to monitor urine pH levels and feed a low-carb, starch-free, nutritionally balanced, species-appropriate, preferably fresh diet

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Bacterial urinary tract infections (UTIs) are more common in dogs than cats, and as is the case with humans, they're seen more often in females. Estimates are that about 14% of dogs will develop a bacterial UTI at some point in their lives.<sup>1</sup>

E. coli bacteria are responsible for about half of all UTIs in dogs. These infections are typically the result of a change in a dog's immune defenses that allows pathogenic bacteria to proliferate and persist in the urinary tract. Most UTIs develop in the bladder, but they can also occur in the kidneys, ureters and urethra.

UTIs can also be the result of a disease process, the dog's individual anatomy, the use of catheters and certain drugs. For example, dogs at higher than normal risk for UTIs include:

- Diabetic dogs
- Dogs with Cushing's disease (hyperadrenocorticism)
- Dogs who receive repeated administration of **steroids** (e.g., prednisone)
- Hospitalized dogs who are catheterized

Bladder infections occur when bacteria move upward into a microbially balanced bladder from a dog's genitals, perineum or rectum. Unless there is a strong, frequent flow of urine out of the body, pathogenic bacteria will continue to ascend toward the bladder. In dogs with inadequate immune defense mechanisms or unnatural pH, the bacteria colonize and proliferate in the folds and lining of the bladder, causing an infection.

## Symptoms and Diagnosis of a Urinary Tract Infection

Some signs your dog may have a urinary tract infection include:

- Suddenly starts urinating in the house
- Persistent licking of urinary openings
- Dark or cloudy urine; visible blood in the urine
- Loss of bladder control; **urine dribbling**
- Inability to pass urine or passing very little urine
- Vomiting, lethargy, lack of appetite
- Straining to urinate; crying out in pain
- Drinking more water than usual

These are all signs that can indicate a potentially serious issue with your dog's urinary tract or bladder. It's important to get your dog, along with a urine sample, to your veterinarian as soon as possible.

Your vet will use your sample (or take a sample from your dog) to run a **urinalysis**, which will provide important information about your pet's condition. In addition to providing information about the presence of blood, protein, glucose, ketones and bilirubin, a urinalysis will also determine how well your dog is concentrating urine, which is an indicator of kidney health.

The biggest issue I see within the holistic community is pet parents assuming they can resolve all urinary issues themselves, lumping UTIs, cystitis and crystals all into the same category. This is where things can go south quickly, and where I have seen people with good intentions end up with critically ill pets suffering from terrible kidney infections that they erroneously assumed they could fix on their own.

Here's where more information is critical, and where partnering with your vet is paramount. If your pet is exhibiting any sign of urinary discomfort, the first thing you must do is get more information as to why, which is where the urinalysis comes in.

The urinalysis will also detect white blood cells, indicating there is inflammation or infection. A urine culture and sensitivity test can determine if bacteria is present and what type, to formulate a treatment plan. In about 25% to 30% of dogs with UTIs, one or more additional pathogens are present with E. coli, and these cases can be considerably more difficult to resolve.<sup>2</sup>

If an infection is present, medication will most likely be needed to treat the problem. However, sometimes pets develop inflammation (cystitis) or urinary crystals without an infection. In this case, a different set of medications may initially be needed, but ultimately, in both situations, this is often a sign that it may be time to change your dog's diet (more about that shortly).

The most important thing to remember is to not assume the problem is inflammation, when it could be a raging infection. Because all infections also incite an inflammatory response, UTI symptoms can be temporarily reduced with natural supplements that address inflammation.

The problem is the bacteria creating the infection are not obliterated, so although the symptoms are temporarily better, the unaddressed infection is allowed to travel from the bladder up the ureters to the kidneys (and sometimes into the bloodstream, creating a life-threatening situation).

Because the symptoms are identical, the only way to know exactly what you're dealing with, in terms of infection versus inflammation, is to have a urinalysis performed by your vet. Please don't attempt home treatment until this step has been completed, or you risk the infection spreading and your pet becoming much more ill, or having permanent kidney damage.

## **Risks Associated With Chronic Urinary Tract Infections**

As I mentioned, most urinary tract infections are treated with antibiotics. For the treatment to be successful, it's important not to guess at what drug will resolve the infection. The appropriate drug must be selected (which requires a culture and sensitivity test), and the length of therapy must be adequate.

There are many side effects of antibiotic use, including gastrointestinal (GI) symptoms that can lead to the dog's owner not giving the drug as prescribed, the dog refusing the drug and/or decreased absorption leading to inadequate levels of antibiotic in the blood or urine.

These issues can interfere with the elimination of the bacteria that is causing the infection, and can also contribute to antibiotic resistance. When a dog has recurring UTIs, it can be the result of a too-short course of antibiotic therapy, or the inability of the drug to reach the location of the bacteria.

If no culture was performed, or if the bacteria were only partially sensitive to the medication, or if the drug was discontinued too early, relapses can occur very quickly after a course of antibiotics is finished. In addition, the partially-treated UTI can reappear after some time has passed and be mistaken for a new infection.

In addition, antibiotic resistance is a growing problem in both human and veterinary medicine. A 2008 study revealed that bacterial resistance is highest in dogs with recurrent E. coli-related urinary tract infections,<sup>3</sup> and an earlier study identified E. coli bacteria in two dogs that proved resistant to 12 different antibiotics over the span of two weeks.<sup>4</sup>

If your pet's urine culture reveals a drug-resistant strain of bacteria, I recommend you do two things: ask your vet to complete extended spectrum testing, which evaluates other medications that may be more effective at treating the resistant infections, and seek **integrative veterinary care** immediately.

Functional medicine vets have an entirely different set of tools in their medical "toolbox" that can dramatically bolster innate bladder defenses. For aggressive infections, both approaches are necessary to cure the patient.

## How to Monitor Your Dog's Urinary Tract Health at Home

Given the serious nature of bacterial infections and the risks associated with antibiotic therapy, it's important to do what we can to prevent UTIs in the first place. One excellent way to do that is to routinely check your **dog's urine pH levels**. Thankfully, you can easily buy urine test strips over the counter (and online) that can give you some idea of what's happening with your pet's urine, including subjectively measuring trace amounts of blood, white blood cells and urinary pH.

Dogs are carnivores and should have a slightly acidic urine pH of between 6 and 6.5. (The higher the urine pH, the more alkaline it is.) Vegetarian mammals like rabbits and horses naturally have a very alkaline urine pH (above 8.0). Human urine is slightly more alkaline (between 6.5 and 7) than that of canines.

It's important to keep your healthy dog's urine pH slightly acidic (below 7), because urine maintains its natural defenses when kept in the appropriate 6 to 6.5 range. When the pH creeps up toward the alkaline side, urine begins to lose its natural defenses against pathogens, which creates a more hospitable environment for bacterial growth and the development of struvite crystals.

The flip side of the coin is a urine pH below 6, which can cause your dog to develop a different type of problem — **calcium oxalate stones**. If your dog has had one or more infections or other problems with the urinary tract, I recommend buying pH strips from your veterinarian or at the local drug store, to check urine pH at home so you know when it's in or outside the desired range.

Urine samples should be collected in the morning before you feed your dog. You can either hold the urine test strip in the stream of urine while your dog is voiding, or you can catch a urine sample in a container and dip the tape into the sample to check the pH. This should be done immediately with a fresh sample to insure accuracy.

## The Best Diet for Your Dog's Urinary Tract Health

In my experience, poor or improper diet is the culprit in the vast majority of cases of dogs with chronic urinary tract problems. A prescription diet, which many conventional veterinarians recommend, typically combines high-carb foods with medications to lower your dog's urine pH. This is never my approach. Instead, I transition dogs to a diet that eliminates pro-inflammatory alkalizing carbohydrates.

When we feed carnivores a cereal-based diet, their urine becomes alkaline as a result. Meat-based diets are naturally acidic, whereas alkalizing starch-based diets are frequently the cause of chronic UTIs, because as I mentioned earlier, lack of acidity removes the antimicrobial activity in urine. Alkaline urine can also create cystitis (bladder inflammation), crystals and even uroliths (stones) that require surgery.

Often, a dog's urine pH can be maintained naturally between 6 and 6.5 by feeding a nutritionally balanced, species-appropriate, preferably fresh food diet. To reduce urine pH, you must feed a low-carb, starch-free, potato/tapioca/lentil-free (so no **grain-free kibble**), and preferably fresh or at least canned food diet for the increased moisture content.

There are products on the market to reduce urine pH that contain the acidifying amino acid DL-methionine. This is a safe addition to your dog's diet, but a more logical approach is to simply stop feeding grains and alkalizing foods.

In a 2016 study, scientists evaluated the effects of cranberry extract on the development of urinary tract infections in dogs. Their study results showed that cranberry extract appears to be as or more effective in preventing E. coli-related urinary tract infections in dogs as short-term antimicrobial treatment — without the side effects. In addition, cranberry extract can help fight multidrug resistant bacteria in dogs with recurrent E. coli UTIs.<sup>5</sup>

I recommend choosing an **organic cranberry extract with D-mannose**, which is a simple sugar closely related to glucose that occurs naturally in cranberries, peaches, **apples**, other berries and some plants. D-mannose is fully absorbed (but does not prompt an insulin release or rock blood glucose levels, so there's no negative systemic side effects) and quickly travels to the kidneys, then the bladder, and is excreted in urine.

D-mannose goes to work in your dog's bladder, where it adheres to E. coli lectins. Almost all the D-mannose winds up in urine, which in turn coats the E. coli bacteria so it can't stick to the walls of the bladder, and is rinsed out of the body when your dog urinates.

## Sources and References

[Charleston Gazette-Mail, April 30, 2018](#)

<sup>1,2</sup> [Charleston Gazette-Mail, April 30, 2018](#)

<sup>3</sup> [Canadian Veterinary Journal, 2008 Oct;49\(10\):985-90](#)

<sup>4</sup> [Journal of Clinical Microbiology, 2002 Oct;40\(10\):3586-95](#)

<sup>5</sup> [American Journal of Veterinary Research, 2016 Apr;77\(4\):421-7](#)

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