

# Cystitis/Urolithiasis in Dogs

## What Is Cystitis?

Cystitis is inflammation of the urinary bladder. Cystitis can also be associated with diseases of the urinary tract such as urolithiasis (urinary stones). In veterinary practices, urinary disorders are a frequent owner complaint. Cystitis is reported in about 3% of the dogs seen by veterinarians.

## What Are Uroliths?

Uroliths are small stones (also called calculi) that form in the urinary tract (see illustration on the right). Oddly enough, uroliths can be the result of an infection – or they can predispose to infection. There are four common types of uroliths, based on composition, in dogs. The most commonly seen is struvite, although calcium oxalate, ammonium urate, and cystine calculi are also observed.

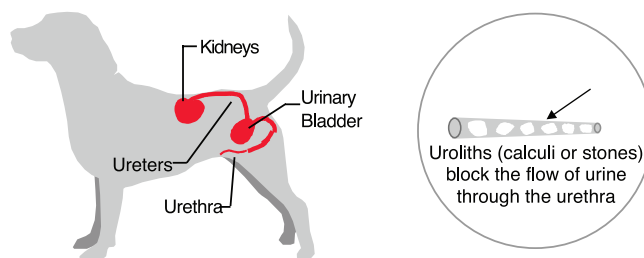
## Clinical Signs Of Cystitis In Dogs

The most common sign of cystitis is a change in urination habits – increased frequency, decreased amount, straining, or passing blood in the urine. Males, with long, narrow urethras, are more likely to suffer obstruction of the urinary tract if uroliths form. Signs of obstruction are straining with little or no production of urine. Uroliths are usually seen in dogs between three and seven years old, but have been reported in young pups and older dogs.

## Causes Of Cystitis

An infection that moves up through the lower urinary tract (the area from the urinary bladder to the end of the urethra) is the most frequent cause of cystitis. In male dogs, chronic prostate infection can be a source of bacterial bladder infections. Other conditions that can complicate the infection include urinary stasis (reduced or stopped urinary flow), trauma, abnormal urine composition, or

Simplified Illustration of a Male Dog's Urinary Tract



calculi. Between 50 and 90% of struvite urolithiasis is associated with bacterial urinary tract infection, and the most common bacteria found in the urine of infected dogs is *Staphylococcus*. Until the stones are removed, it is virtually impossible to clear up the infection. Diet does not cause cystitis.

## Cystitis Treatments

Before treating cystitis, a urine culture is normally taken to determine the type of infection involved. X-rays can also be used to identify uroliths present in the urinary tract. Any uroliths identified must be removed. Appropriate antibiotics are then administered. If a dog is prone to reinfection, long-term antibiotic therapy may be necessary.

## An Acidic Urine Is Important In Treating Cystitis

Struvite uroliths are more soluble in an acidic urine. If the proper urine pH level is maintained, the conditions for urolith formation are less likely to occur. The ideal pH level for dog urine is acidic, between 6.4 and 6.6. Because reinfection is a common problem in dogs prone to cystitis or urolith formation, oral urinary acidifiers are often prescribed.

### *Can Diet Help Correct Cystitis?*

Diet has been suggested as an alternative to surgical removal of stones. Surgical correction is rapid, while the dissolving process through diet therapy takes at least 3 – 6 weeks and is effective only for struvite uroliths. Even with struvite stones, the dietary “removal” process requires antibiotics, recheck visits to the veterinarian, and a 3 – 6 week period of continued presence of stones in the bladder. (Though dietary changes are also prescribed for cats with urinary problems, the compositions of dog and cat diets are quite different and foods designed for cats should not be used for dogs nor vice versa).

### *Application*

- Diets such as Eukanuba® and Iams® that contain high-quality, animal-based protein sources can help maintain an acid urine, minimizing the recurrence of uroliths. Eukanuba and Iams dog foods are formulated to produce a urinary pH between 6.4 and 6.6. If additional acidification is necessary, oral urinary acidifiers can be prescribed by a veterinarian.