

# *All about Stones in Dogs.*

*The Breed Council Health Committee has looked into the problem of stones ,because a DNA test for Hyperuricosuria to find the gene which is implicated in the development of URATE stones has been developed which works with Bulldogs and many other breeds including Black Russian Terriers.*

*Dalmations all have a copy of the affected Gene within the make up of the whole breed .However extensive research has revealed that although all Dalmations carry the affected gene only 30% will go on to develop URATE stones and that more research is needed to analyse why Gene Affected dogs don't all develop the problem; its thought another as yet unknown factor, is involved.*

*With this information we are going to try to explain the subject and describe all conditions of stones in all breeds of dog .*

## **BLADDER STONES & GRAVEL**

### **INTRODUCTION**

*This fact sheet covers conditions relating to the formation of stones or gravel in the urine in both dogs and cats, a condition sometimes referred to as urolithiasis.*

### **THE URINARY TRACT**

*Both dogs and cats commonly suffer from urolithiasis and associated urinary tract symptoms. Gravel is a particular problem in cats, whilst stones are more commonly seen in dogs. They can cause a variety of problems, particularly recurrent bouts of cystitis, difficulty passing urine and incontinence. Occasionally, much more serious problems can arise, such as blockage of the urethra.*

*Urine is formed by the kidneys when the blood is filtered to remove waste products. Urine passes from the kidneys through two tubes called the ureters, to the bladder, where it is stored. When your dog or cat urinates, the bladder contracts and the urine passes out through a larger single tube called the urethra.*

### **BLADDER STONES in the DOG**

*Stones form in the bladder when minerals dissolved in the urine form crystals, which then amalgamate and form uroliths, small gravel-like particles or stones. These can vary quite considerably in size, ranging from minute stones that can barely be seen, to those the size of a small orange. The stones form for a variety of reasons; often there is no one single cause. However, urinary tract infections,*

stress, high levels of certain substances in the diet, low water intake and situations where an animal is not given the opportunity to urinate at will, can all increase the chances of a problem arising. Some breeds of cats and dogs are especially prone to bladder stones. The age and sex of the animal also play a part.

### **SIGNS & SYMPTOMS**

In most, but not in all cases, the presence of stones or gravel will cause some clinical signs, depending on the type and size of the stones and the age and sex of the dog. Cystitis is the most common symptom, caused by the stones rubbing and irritating the lining of the bladder. You may notice that your dog wants to pass small amounts of urine (sometimes containing blood) more frequently. Passing urine can be quite painful and you may see some straining or discomfort. Cystitis can be treated conventionally with antibiotics, normally clearing the infection quickly. However, if the problem fails to respond to treatment or becomes recurrent, then it would be wise to investigate the possibility of bladder stones.

In some cases, incontinence is the only apparent sign. Straining and the constant need to pass urine are absent and the only symptom is leakage or dribbling of urine whilst your dog is lying down.

In males, due to the fact that the urethra is narrow, it is possible for small stones to become lodged part way down, blocking the flow of urine. This is potentially a very serious situation, which can lead to rupture of the bladder or kidney damage. Prompt treatment from your vet is always necessary where an obstruction is suspected. This situation is much less likely with a bitch, as the urethra is larger in diameter. You may, however, see small stones passed intermittently.

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Bladder stones are made up of a variety of different components and are grouped accordingly.

The most common type of stone is composed of **struvite**, a mixture

of magnesium, ammonium and phosphate. **Struvite** accounts for about 50% of bladder stones and is the most common type of stone seen in bitches.

Less common types of bladder stone include **oxalate (30% of all stones)** **urate (8% of all stones)** which is found in Dalmatians, and **cystine (1% of all stones)**. All three occur predominantly in males.

The symptoms exhibited by your dog may lead your vet to suspect bladder stones and to confirm his suspicions he may decide to carry out X-rays. Most bladder stones will show up on X-rays if of sufficient size to be seen. Unfortunately, it is often difficult to spot very small stones or gravel. A urine sample can also be very helpful, as the pH (acidity/alkalinity) of the urine is a valuable guide. **Struvite** stones normally form in alkaline urine, whereas **cystine and urate** normally form in acid urine. **Oxalate** stones can form in either. Some dogs can have a mixture of different stones.

Depending on the type and number of stones, there are several different ways of dealing with the problem. In the past, stones were always removed surgically and although this is still the usual course of action for oxalate and cystine stones, it is possible to dissolve away other types using special diets. Your vet will be able to advise you on the best course of action and supply any specialised diet. On average, it will take about **eight weeks to dissolve stones**, during which time you must keep strictly to the diet. In general, increasing the fluid intake of your dog will help in the management of all types of stone.

Diet is extremely important in preventing recurrence once the stones have gone.

What you will need to do will vary with the type of **stones**.

**For Struvite the diet needs to be:**

*Low in magnesium and phosphorus*

*Have a reduced level of protein. Excess protein is broken down into ammonia,  
another constituent of struvite*

***For Oxalate the diet should be:***

*Moderately restricted in calcium, protein and sodium*

*For Urate the diet should be:*

*Restricted in protein*

*For Cystine*

*An increase in fluid intake is recommended*

*As well as food prescribed by the Veterinary Profession the company Denes manufactures special diets ,and provided the above definition of Canine Stones [thank you ]*

***Conclusions drawn by the Health Committee September 2011 were as follows :***

*We did not feel at this time it was a significant problem warranting a blanket testing of all breeding stock ,we do however advise any breeder who has had this problem within its lines to test all stud dogs ,and breeding bitches and mate carrier animals to clear ,to eliminate the problem*

***Conclusions drawn by the Health Committee September 2018 are as follows :***

*With the data available to us and the testing which has been done over the 7 years the situation on HUU stones is this .Not much difference has been made to the affected which continues to be minimal ,however the number of carriers is much less ,and the number of clear dogs being bred and in the health scheme is significantly higher , this we feel is working well and are pleased that most bulldog breeders have taken this one DNA test onboard and used it effectively as a tool to eliminate and lessen a possible painful condition .*

*The following laboratories do the testing*

*Animal Health Trust [www.aht.org.uk/dnatesting](http://www.aht.org.uk/dnatesting)*

*Animal Diagnostics [www.animaldnadiagnostics.co.uk](http://www.animaldnadiagnostics.co.uk)*

Laboklin [www.laboklin.co.uk](http://www.laboklin.co.uk)

*The Kennel Club have formed a data base to carefully record the dogs passed as clear , carrier or affected for future reference accessible in myKC, however without a knowledge of how genetics work interpretation of the published results must be discussed with a vet .*

*We have given you all the information here that is available to us, the definition, causes and the treatment and below in the KC information the mating protocol to follow to eliminate the problem from dogs found to carry the gene.*

*An advisory note from our Veterinarian .*

*Because you test for this gene which could lead to the formation of the Urate stones condition and find your dogs clear you must be extremely careful **not to advertise puppies as being 'clear from stones'** because there is no guarantee that the other types of stones may not develop in the dogs future life some stones are definitely environmental so you would be open to litigation .*

*For a full information guide the Kennel Club have published the following which contains information and a chart as to how to interpret results, it is very informative and highly recommended by the Breed Council Health Committee*

[https://www.thekennelclub.org.uk/media/451962/breeding\\_health.pdf](https://www.thekennelclub.org.uk/media/451962/breeding_health.pdf)

***There is a further test developed for Cystine stones** however all laboratories don't do it as at the moment the accuracy is disputed, individuals recommended to make their own mind up on researching available information*

*Updated information Bulldog Breed Council Health Committee 2018*