

# The Dalmatian Club of America

## Urinary Stone-Forming in Dalmatians and Other Dogs

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### Introduction

Dalmatians, Bulldogs and many other breeds can form urinary stones. Innumerable stone-forming dogs, Dalmatians included, live out their lives happily and uneventfully without any sign that they are stone-formers according to U.S. veterinary centers specializing in urinary stone problems. Other Dalmatians, also never showing any symptoms, may not be stone-formers at all.

Most dogs who exhibit symptoms of stone-forming can be easily and successfully treated. Veterinary knowledge of canine urinary stones and their non-surgical treatment has expanded rapidly within recent years. Today, there are even two national veterinary centers specializing in urinary stones: the Minnesota Urolith Center at the School of Veterinary Medicine of the University of Minnesota, and the Urinary Stone Analysis Laboratory at the School of Veterinary Medicine of the University of California at Davis (addresses cited at end of article).

The best **preventatives** for stone-forming in Dalmatians are those of diet and probably of water intake. Paralleling the splendid advances in veterinary knowledge, commercial availability of many special dogfoods for this problem has also evolved. Most of these are readily available at local pet stores, others by prescription. After being weaned from the mandatory puppy diet, maturing and adult Dalmatians (stone-formers or not) can be fed now from a choice of non-beef, non-meat dogfoods (such as vegetable-and-rice or turkey-and-barley) and go their entire lives without the onset of urinary stones. In others, stones already formed can be non-surgically and successfully dissolved with certain medications and prescription anti-stone-forming dogfood from the veterinarian. For the few for whom bladder surgery is unavoidable, modern anesthetics such as "**Isofluorane**" for dogs provide no more threatening nor complex a procedure than appendix removals in humans.

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### Why Do Some Dalmatians Form Urinary Stones?

Dalmatians, humans and apes are unique for the way in which they metabolize "purine-yielding foods." Not every human will form urinary stones and neither will every Dalmatian.

The **amount** of dietary protein may contribute to the problem but, more importantly, the **type** of protein can be more damaging. For many Dalmatians, it is those diets containing high amounts of purine-yielding foods to be avoided. Certain

foods such as liver and other organ meats are very high as purine-yielders, other foods like eggs and most vegetables and fruit are acceptably low as purine-yielders.

When some humans ingest foods high in purines, they develop gout or kidney stones. When some Dalmatians ingest those foods, they develop urinary stones and in particular those known as "purine" or "urate" stones. Dogfoods containing high amounts of meat, beef and meat- or beef-"by-products" should be carefully evaluated for Dalmatians as well as other formulations creating an abnormally high acidic urine.

Of all stone-forming Dalmatians, the vast majority form urate stones but a few may form other types. Treatment can be the exact opposite for each type of stone so your veterinarian will want to first obtain an accurate assay in order to prescribe the most effective treatment.

### **FEEDING MOST TYPES OF HUMAN TABLE SCRAPS TO DOGS IS PERHAPS ONE OF THE WORST DISSERVICES TO THEIR NORMAL GOOD HEALTH... ESPECIALLY TO DALMATIANS!**

Urate stones are composed of one or several of three types of purines: 1) ammonium acid urate, 2) uric acid or 3) sodium urate. **Over 90 percent of stone-forming Dalmatians produce ammonium acid urate**, a purine stone very responsive to simple non-surgical treatment with a conscientious program of anti-urate medication and anti-urate diet.

Urinary stones in dogs are found in the upper system (such as in the kidneys), or in the lower system (such as in the bladder). Data collected over 10 years of stone-forming Dalmatians showed 97 percent of their stones were found in the bladders where treatment and maintenance is much more simple and successful than for those in the kidneys and upper system.

The most common type of stone in all breeds of dogs is "struvite," so identified with urinary infections they are called "infection stones." **THE TREATMENT OF INFECTION STONES VS. URATE STONES IS TOTALLY DIFFERENT** and underscores the importance for first, accurate assay of the type of urinary stone being formed by the Dalmatian before treatment is started.

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### **How is a Stone-Former Detected?**

A standard urinalysis will immediately show if abnormal crystals are forming in the urine long before the crystals "grow up" to become stones which then may reach a size large enough to create the dreaded urinary obstruction.

If no diagnostic tests have ever been done to reveal its presence, stone-forming in male dogs will produce emergency symptoms more obviously than in females perhaps because of the marked difference in their normal urinary anatomy. As a large enough stone travels down the urinary pathway, it can lodge within the male dog's penis at a damlike narrowing of a cartilage, the "os penis." The same size stone will usually pass uneventfully through the female dog's urinary anatomy.

When normal urine flow is obstructed by a stone, the male dog will visibly strain to urinate. No urine will pass or only a few drops. The dog will attempt to urinate repetitively with little or no result. Urinary obstruction in male dogs is thus very visible to the observer familiar with these signs and **watching for them daily**.

Females with stones will demonstrate symptoms similar to those of urinary infections, namely more frequent urinating, "accidents" by housebroken bitches and very frequent licking of their genital area. (Because these are similar symptoms to simple urinary infections, do not become concerned unless results of a urinalysis confirm abnormal crystals are being formed.) Some stone-forming dogs will succeed after several attempts with a sudden outpouring of urine. In such an instance, it is probable that the stone creating the obstruction was "passed," restoring the normal flow of urine. Any obstructed dog, even those who quickly pass stones naturally, should be seen by their veterinarian for workup and to embark on a preventative program of anti-stone medication with the proper anti-stone diet.

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### **Specialist Veterinarians for Consultation on Stone-Forming**

#### **Minnesota Urolith Center**

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### **Urinary Stone Analysis Laboratory**

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