

# URINARY STONE-FORMING IN DALMATIANS & OTHER DOGS

by

Carroll H. Weiss

Study Group on Urinary Stones  
Research Committee  
Dalmatian Club of America

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## Introduction

Dalmatians, Bulldogs and many other breeds of dogs 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, never showing any symptoms, presumably are not stone-formers.

Those dogs who exhibit symptoms of being stone-formers 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.

The best preventative for stone-forming in Dalmatians is that of diet. Paralleling the splendid advances in veterinary knowledge, commercial availability of many special dogfood formulations for this problem has also evolved. Most of these are readily available at local pet stores. After being weaned from the mandatory puppy diet, older and adult Dalmatians (stone-formers or not) can be fed now from a choice of non-beef, non-meat dogfoods (such as chicken-and-rice or turkey-and-barley or vegetable-and-rice) 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 canine anesthetics such as Isoflurane provide no more threatening nor complex a procedure than appendectomies in humans.

## Why Do Some Dalmatians Form Urinary Stones?

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

It is not the amount of protein causing the problem so much as the type of protein, in this case those foods containing high amounts of purines. Certain foods such as liver and other organ meats are alarmingly high in purines, other foods like eggs and most vegetables and fruit are acceptably low in purine proteins. When some humans ingest purine-yielding foods, 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 purine-yielding ingredients such as meat, beef and "meat or beef byproducts" should be avoided for Dalmatians.

**FEEDING MOST TABLE SCRAPS AND OTHER HUMAN FOODS TO DOGS IS PERHAPS ONE OF THE WORST DISSERVICES TO THEIR HEALTH... AND ESPECIALLY TO DALMATIANS!**

Urate stones are composed of one or more 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 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 ten years of stone-forming Dalmatians showed 97 percent were found in their bladders where treatment and maintenance is much more simple and successful than if the stones are found in the kidneys and the upper system.

The most common type of stone in all breeds of dogs is "struvite," so frequently seen and 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 by the veterinarian of the type of urinary stone being formed by the dog before treatment is started.

## How is a Stone-Forming Dog Detected?

Male dogs will demonstrate warning symptoms more obviously than 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 dam-like narrowing of the cartilage, the "os penis." The same size stone would 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 the signs.

Bitches 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.

Some stone-forming dogs will suddenly succeed after several attempts with a copious 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 program of prevention.

### **What to Do for Urinary Obstruction?**

Blockage of normal urinary flow becomes progressively serious the more the urine backs up into the dog's system. The top priority therefore is to remove the obstructed urine from the bladder as soon as possible and as often as necessary while the obstruction remains unchanged and while treatment is being evaluated. The dog should be promptly taken to a veterinarian who usually can accomplish this simply and effectively without surgery or anesthesia, sometimes even without tranquilizers. One procedure is "cystocentesis" whereby a needle is inserted through the dog's abdomen into the bladder and urine is tapped off. Most dogs tolerate this procedure well.

The veterinarian can also catheterize the dog in a special way by which the obstructing stone is "back flushed" into the bladder thereby removing the cause of the obstruction and reopening the normal flow of urine. After a successful "back flushing," some dogs do not ever obstruct again, some do not for years although some can obstruct within a matter of hours or days as a stone again moves down the system until it lodges without being passed. A second or even a third "back flushing" may be required to produce long-term relief.

Once normal urinary flow has been successfully restored, the dog can live out its years happily and uneventfully so long as its owner conscientiously adheres to a preventative program (mostly an anti-stone diet for Dalmatians). Most recently, providing the stone-forming Dalmatian with only "distilled water" (available from supermarket bottled water shelves) has been of consistent benefit although no

scientific documentation exists either for its use or for not using it.

### **Some Sources of Information on Stone-Forming in Dalmatians**

The Dalmatian Club of America (DCA) through its Research Committee maintains a series of Study Groups one of which is the "Study Group on Urinary Stones." This group issues periodic news bulletins on its subject to the approximately 40 regional DCA clubs throughout the U.S. and Canada. It also maintains and provides compendia of definitive information on urinary stone-forming, a few of which are now on the Internet at :

<http://www.dalmatians.com/dca/stone.html>

An elaborate information package of some 60 pages is available for at-cost charges. The current address of the Study Group on Urinary Stones is:

Carroll H. Weiss  
8290 Northwest 26th Place  
Sunrise FL 33322-2951  
Tel: (954) 741-5560  
Email: [carroll@suntech.net](mailto:carroll@suntech.net)

An excellent teaching videotape on stone-forming in Dalmatians and other dogs was produced when the veterinarian representing the Minnesota Urinary Stone Center was the featured speaker for the 1992 DCA annual education seminar.

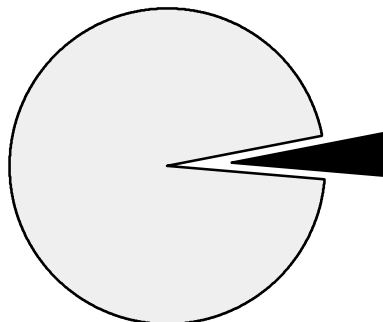
The two national veterinary centers specializing in urinary stone-forming in dogs are:

**MINNESOTA UROLITH CENTER**  
**DEPT. OF SMALL ANIMAL PRACTICE**  
**U. OF MINNESOTA SCHOOL OF VET. MED.**  
**C339 VETERINARY HOSPITALS**  
**ST. PAUL, MN 55108**  
**TELEPHONE: (612) 625-4221**  
**FAX: (612) 624-0751**  
**E-MAIL: osbor002@maroon.tc.umn.edu**

**URINARY STONE ANALYSIS LABORATORY**  
**DEPT. OF MEDICINE**  
**SCHOOL OF VETERINARY MEDICINE**  
**U. OF CALIFORNIA AT DAVIS**  
**DAVIS, CA 95616-8737**  
**TELEPHONE: (916) 752-1363**  
**FAX: (916) 752-0414**

**SOURCE OF 6,730 STONES BY BREED  
(1981 - 1990)**  
**Urinary Stone Analysis Laboratory  
School of Vet. Med., U. Cal. at Davis**

**96 PERCENT  
FROM  
OTHER BREEDS  
(6,438 STONES)**



**4 PERCENT  
FROM  
DALMATIANS  
(292 STONES)**