

LOW PROTEIN VS. HIGH PROTEIN IN GENERALIZING ABOUT DIETS FOR STONE-FORMING DALMATIANS

The Study Group on Urinary Stones is concerned with some generalities and comments recently picked up by a national Dalmatian magazine from the newsletter of a regional Dal club. We are especially disturbed because many of those statements can be misleading to the unsophisticated reader whose Dalmatian may be a stone-former. The following Dalmatian scientific data and facts come not from “a food survey...of 60 breeders” but from 78 years of published veterinary textbooks and veterinary journal articles, particularly within recent years emanating from the two US veterinary centers specializing in urinary stones:

The Minnesota Urinary Stone Center of Professor Carol Osborne, DVM at the U. of Minnesota Veterinary School in St. Paul, MN, and The California Urinary Stone Center of Professor Gerald Ling, DVM at the U. of California Veterinary School at Davis.

To first understand the impacting influence of diet on urinary stone-forming and the Study Group’s concern about the generalities made – one must know a bit of the scientific background data on stone-forming Dalmatians and the food intake desirable and undesirable for them. A recently published veterinary journal article of 275 Dalmatians over a 10 year period showed 95 percent of the afflicted Dalmatians were confirmed with “urate” stones (stones containing “ammonium acid urate” the most common, or “sodium urate” or “uric acid” or a combination of two or more of those.) URATE stone formation is worsened by diets containing foods known to be high in purines, and all Dalmatians are born with the potential for those types of stones.

FALLACY OF “HIGH PROTEIN” VS. “LOW PROTEIN” IN STONE-FORMERS’ DIETS

Diet, alone, has been reported to control or even prevent URATE stone-forming in dogs including our beloved breed. But, for URATE stone-forming Dalmatians, it is not the amount of protein which helps or aggravates their proteins. Liver, other organ meats and beef are notoriously high in

purines...lamb and poultry less so. Eggs, most vegetables and fruits are very low in purines. Remembering it is not the amount but the type of protein affecting this specific urinary problem, a “high protein” diet hypothetically made up with **NO** purine-containing proteins would not be dangerous to be fed to a stone-forming Dalmatian. Conversely, a “low protein” diet of **ONLY** purine-containing proteins can be extremely undesirable for that same Dal.

An eloquent case history: A Dalmatian, after 13 years of no stone-forming symptoms, - ever – had a few spoonfuls of a 14% protein “treat” food-additive to supplement his diet (unchanged for his entire adult years). A few weeks after adding only two spoonfuls of the daily “low protein” supplement, his ability to urinate one day abruptly became totally obstructed by urate stones. (Urinary obstruction in male Dalmatians is a life-threatening condition and mandates immediate emergency veterinary treatment.) Closer re-examination of the food label **showed the low amount of 14% protein** (the lowest protein percentage quoted from the published “food survey”) **to be liver**, perhaps the worst purine-containing food to be fed to Dalmatians.

Where, why and how the generality of “low protein” diets for Dalmatians came to be is unknown, but for URATE stone-forming Dalmatians, unqualified comments on “high” vs. “low” protein food should not be published indiscriminately or without scientific fact and professionally-determined statistical significance. Another eloquent example: For years, “rice and vegetable” diets (homemade or commercial) has been a frequent conversational subject when breeders and fanciers get together...yet spinach, asparagus, cauliflower and lentils contain **vegetable-proteins** known to be high in purines. This is another common generality about Dalmatians” food and emphasizes how indiscriminately recommending just any “vegetable” diet for stone-forming Dalmatians

can worsen their condition unless knowledgeable and responsibly qualified.

We accordingly urge the Dalmatian breeder and fancier, and certainly those publishing and disseminating dietary recommendations, to go to their local library and consult a nutrition textbook for a tabulation of purine-containing foods. IT IS PURINE-CONTAINING PROTEINS TO BE AVOIDED FOR THE SPECTER OF STONE-FORMING, NOT JUST WHETHER A FOOD IS “HIGH “OR “LOW” PROTEIN. On the other hand, “high” vs. “low” protein foods may indeed have significance for Dalmatian health problems other than stone-forming.

STONE-FORMING IN DALMATIAN BREEDLINES

Breeders are being quoted “while they never have owned a stone-forming Dalmatian, their males have produced stone-formers or pups [were] ...stone-formers.” This surmise can be highly questionable if those Dalmatians, like the 13 year one cited previously, never had obstructed and never had shown other observable symptoms and the breeders then jumped to the understandable and usual {but unsubstantiated} conclusion that the Dal was “not a stone-former.” The veterinary authorities on urinary stones state quite emphatically that many stone-forming dogs, Dalmatians included, live out their lives without ever showing symptoms of this health problem which therefore goes undetected and undiagnosed. Dr. Osborne labels these dogs as “silent stone-formers.”

Since 1916 veterinarians have known all Dalmatians have a breed-specific potential for a certain kind of urinary stone-forming. (It is a tendency also shared by human beings and some apes.) This characteristic of Dalmatians is taught to students at veterinary schools and has been the subject articles in veterinary journals and veterinary textbooks throughout the world for the past 78 years. For those fanciers dismayed with this breed-specific realization, let me quickly reassure them that not every human being forms kidney stones and not every Dalmatian becomes a stone-former. But the potential of urate stone-forming still is there, “unique [to Dalmatians] from that of other breeds...” according to a 1993 article from the California Urinary Stone Center in the Journal of the American Veterinary Medical Association. The influence of diet and other contributory factors on Dalmatian stone-forming is also taught to veterinary students. This is perhaps why the most

effective anti-urate stone diet, Hill’s u/d®, can only be obtained as a prescription food from licensed veterinarians so that, unlike published generalities from a “survey,” the food formulation can be recommended because of specific scientific rationale and based on scientific diagnosis of each Dalmatian’s need for it.

The least expensive test for stone-forming in Dalmatians is a periodic routine, standard urinalysis during which centrifuging will show whether the dog is throwing excessive urinary crystals (crystals can “grow up” to become full-fledged stones.) If periodic testing (regardless of changes in diet, consistently shows no abnormal urinary crystals, it may be concluded the Dalmatian is not a stone-former, not even a “silent” one. Be aware, though, that urinating flushes out many crystals and stones from the dog’s bladder. To avoid a misleading urinalysis, a “fresh” specimen should therefore be obtained from the first urination in the morning, or after the Dalmatian has been crated or indoors for many hours. Specimens should not be refrigerated because temperature drop (from the animal’s body temperature) creates a certain “false” crystallization in the urine. For this reason, the specimen should be taken to the vet’s office as soon as possible to be tested; the desk personnel there should also be cautioned not to refrigerate the specimen and to process it as soon as possible.

Incorrect diet is a major problem for Dalmatian urinary stone-formers but by no means the only one. The quoted breeders from the “survey” happened to be correct in concluding other factors “contributed” to stone-forming (although their emphasis on males suggested the problem rarely occurs in bitches who also can be stone-formers but do not display symptoms as obviously as males perhaps because of their urinary anatomy.) Urine, which sits in the unemptied bladder, will worsen stone-forming. Dalmatians, therefore should not be crated or kept indoors for long periods of time without being given frequent opportunities to flush out their bladders...the more often the more preventative. Flushing out of the bladder also should be encouraged by permitting the Dalmatian frequent or uninterrupted access to drinking of water. If there is the remotest question about the local water quality, commercially bottled water (specifically labeled “distilled” water) should be the only type given to stone-forming Dals at home or at dog shows. And, please, DO NOT BAIT WITH LIVER,

PARTICULARLY Specials who are baited so much more frequently!

In closing summary, then, please consider: “High protein” vs. “low protein” for Dalmatians are generalities which always must be carefully qualified before indiscriminately recommending or publishing diet recommendations and conclusions; Proteins from meats and vegetables containing high levels of prunes are absolutely to be avoided for any Dalmatian known to be forming urate stones or excessive urate crystals in their urine – regardless whether they are receiving “high protein” or “low protein” diets;

Every Dalmatian has the potential to be a urate stone-former because of their breed-specific metabolism. In the absence of stone-forming symptoms, it can only be the considered judgment of the owner and their veterinarian if and when to place their Dalmatians on a preventative low-purine diet (this decision, to be knowledgeably evaluated especially for the diets of young growing puppies,) The least expensive test to determine if a Dalmatian is a “stone-former” is a standard urinalysis, in particular centrifuging for sediment in the urine. The most error-free and knowledgeable identifications of sediment which is centrifuged out is by either the California or Minnesota urinary centers mentioned earlier in this article; the Minnesota Urinary Stone Center does not charge for this service. Urinalysis as a diagnostic instrument of stone-forming in a Dalmatian cannot be significant and reliable unless carried out for that dog many times over the course of many months (or years) to confirm an unchanging pattern of abnormal urinary crystals being present or absent.

Addendum

Two horror stories have been reported to the Study Group on Urinary Stones of a young Dalmatian and a puppy, both males, whose bladders burst as a result of urinary obstruction. A little precautionary observation by their owners could have aborted the progression to such a terrible end.

How is a Stone-Forming Dog Detected?

In males: Urinary obstruction in male Dalmatians is very visible to the observer familiar with the signs. Males will demonstrate warning symptoms more obviously than bitches 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 a stone obstructs normal urine flow, the male dog will strain to urinate, but unsuccessfully. This will be very apparent to the observer: no urine will pass at all or only a few drops. The dog will attempt to urinate repetitively with little or no results

In females: Bitches with stones will demonstrate symptoms similar to those of urinary infections, namely more frequent urinating, or attempts to, “accidents” by housebroken bitches and incessant licking of their genital area.

Some stone-forming dogs will succeed in urinating, 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 program of prevention.

What to Do for Urinary Obstruction?

Blockage of normal urinary flow becomes progressively serious the longer it exists, unrelieved, during which the urine is backing up into the dog’s system. The top priority therefore is to remove the obstructed urine from the bladder as soon as possible, and while the obstruction remains unchanged and while treatment is being evaluated, as often as necessary. The Dalmatian should be immediately taken to a veterinarian who usually can accomplish this simply and effectively without surgery or anesthesia, sometimes even without tranquilizers. The veterinarian will catheterize the dog in a special way by which the obstructing stone(s) can be passed or, if not, are “back flushed” into the bladder thereby removing the cause of the obstruction at the os penis and reopening the normal flow of urine. After a successful “back flushing,” some dogs do not ever obstruct again, some do not for years but some can obstruct within a matter of hours or days as stones again move down the system until they lodge 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, many stone-forming Dalmatians can live out their years happily and uneventfully without the need of bladder surgery so long as their owners conscientiously adhere to a preventative program (mostly an anti-stone diet for Dalmatians.)