Printout of 24 February 2002 – BANNASCH / UC DAVIS ONLINE QUESTIONNAIRE

Attention Dalmatian Owners!

We need your help to understand a serious health problem in your breed. Please take the time to fill out this survey about your Dalmatian. If your dog has a problem with urinary stones please fill out the survey. If your dog has never had a problem with urinary stones then the dog must be at least 6 years of age in order for us to use his/her survey data. If your dog is deceased you can still fill out the survey. You will need your AKC registration papers to answer some of the questions in this survey. The survey should only take about 15 minutes of your time. The survey is completely confidential! We appreciate your help with our research effort! This project is funded by a grant from the AKC-Canine Health Foundation and the Center for Companion Animal Health, School of Veterinary Medicine.

If you have any questions please contact dlbannasch@ucdavis.edu

Go directly to the survey...

Background

A special class of compounds known as purines found in the foods we eat play an important role in sustaining life. Purines serve as molecules of information for part of the genetic code, they convert the energy contained in the foods we eat into a form that our cells can use to function normally and grow, and act as important cellular signaling molecules. Dogs also utilize purines from the foods in their diets. Once purines have been utilized in the body they are broken down by the liver and excreted in the urine or salvaged and returned to the body to be used again. Dogs break down purines to an end-product called allantoin. Allantoin is a soluble compound excreted in the dog's urine. Dalmatians are unique among dog breeds because they lack the ability to convert a breakdown product of this purine metabolism, known as uric acid, into allantoin. Instead they excrete a combination of allantoin and uric acid in their urine. There are medical consequences to the excretion of high amounts of uric acid in the urine. For one thing the uric acid is more insoluble then allantoin. In fact it can aggregate into stones in the urine (see figure 1).

Figure 1 -- Urate stones that have been surgically removed from a Dalmatian's bladder.

Dalmatians have a high incidence of urinary stones composed predominately of salts of uric acid called urate. Urate stones in the urine can lead to a life-threatening blockage of the urine outflow tract. The dog's urine is formed in the kidneys and then passes down tubes called ureters into the dog's bladder. The bladder is a convenient collection system! A dog's bladder can hold up to one liter of urine. From here male and female dogs have different anatomical structures. In females a relatively wide urethra leads over the pelvis and into the vaginal vault and then outside. Males have a much longer urethra since it most travel over the pelvis, under the dog and through the penis bone. The male urethra doesn't have any expansion capabilities since it travels through a bone. This is why male dogs develop life-threatening consequences to stones that travel down the urethra. The signs that a dog (either male or female) has stones in the bladder are varied but can include blood in the urine, an increased urgency to urinate, increased frequency of urination and straining to urinate. Both males and females can show these clinical signs of bladder stones.

One of the mysteries of this disease is that while all Dalmatians have the primary defect of high uric acid in their urine, only a subset of male Dalmatians present with the clinical signs of bladder stones. This male predisposition to bladder stones in Dalmatians has been explained by the differences in urethral morphology between females and males. In other words, both sexes form the bladder stones but only males show clinical signs. The problem with this explanation is that females in other breeds show clinical signs if they have stones in their bladders. In fact in all breeds combined more female dogs are brought to veterinarians with bladder stones then males! Another explanation is that there are predisposing genetic factors that make some male Dalmatians form the stones.

To determine if stone formation has a heritable component, we will need to obtain pedigree information from dogs that are stone formers as well as dogs that are non-stone formers. This type of analysis has been very successful in other breeds to determine the heritability of various diseases. At the same time, we would like to determine if certain environmental factors contribute to stone formation. This survey is completely confidential. The web-based format allows the survey responses, including pedigree information and stone formation status to be directly downloaded into the file format needed for the heritability analysis. We are hopeful that the important issue of the heritability of stone formation can be resolved with the survey analysis.

Take the survey now ...

View Results... (For Survey Administrators only. Login is required.)

Dalmatian Stone Survey

Please read these instructions first!

This survey is completely confidential. We only need questionnaires filled out for dogs over 6 years of age. If your dog is deceased you can fill out the questionnaire. You will need a copy of your dog's registration papers to continue to fill out the survey. Please only fill out information for a dog that you actually own! Please DO NOT include titles in any dog's registered name. Since a computer will be looking for relationships between dogs it is very important that you enter the dog's name as it appears on the AKC registration papers.

Yes/No responses can be most easily entered by pressing the "y" or "n" keyboard keys as you tab through the questions. Please enter something in every text field. If you don't have an answer, just enter "n/a".

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| |
|---|
| 1a. Owner's last name |
| 1b. Owner's first name |
| 2a. Address |
| 2b. City |
| 2c. State |
| 2d. Zip code |
| 3. Email address |
| 4a. Area code (3 digits: 999) |
| 4b. Phone number (7 digits: 9999999) |
| 5. Survey Date |
| 6. Registered name of your dog no titles (25 char) |
| 6a. AKC number ( 10 char ) |
| 7. Sire's name ( 25 char ) |
| 7a. Sire's AKC number ( 10 char ) |
| 8. Dam's name ( 25 char ) |
| 8a. Dam's AKC number ( 10 char ) |
| 9. Your Dog's Date of birth (m/d/yyyy) |
| 10. Sex of your dog (M/F) |
| 11. Has your dog been neutered/spayed? (Y/N) |
| 11a. What year was your dog neutered/spayed? (yyyy) |
| 12. Has your dog been diagnosed with bladder stones? (Y/N) If yes please answer the following questions. |
| a. Were the stones treated with surgery? (Y/N) |
| b. Were the stones removed by a non-surgical means? (Y/N) |
| c. Were the stones left in the dog's bladder? (Y/N) |
| d. Were the stones analyzed by a lab? (Y/N) |
| e. Were the stones determined to be urate? (Y/N) |
| f. Was your dog treated with allopurinol? (Y/N) |
| g. Did the stones reoccur? (Y/N) |
| 13. Has your dog been diagnosed with kidney stones? (Y/N) |
| 14. Has your dog had crystals in its urine? (Y/N) |
| 15. Does your dog sleep in the house (Y/N) |
| 16. Does your dog have free access to the outdoors at night? (Y/N) |
| 17. Does your dog have free access to water during the night? (Y/N) |
| 18. Does your dog have free access to the outdoors during the day? (Y/N) |
| 19. Does your dog have free access to water during the day? (Y/N) |
| 20. Do you think that your dog drinks a lot of water? (Y/N) |
| 21. Would you consent to a follow-up contact about this survey? (Y/N): |
| 22. Would you be willing to provide a blood sample from your dog? (Y/N): |

THANK YOU! Please review your answers, and then press the "Submit" button below:
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