

**Answers to Questions Asked by the Pro-Backcross  
Registration People**

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1. The AKC's Health and Welfare Advisory Committee has a standing committee that provides impartial guidance on scientific and ethical issues. The committee is made up of people with a wide range of credentials related to canine health. In 2009, the AKC Board asked that committee to do a through review of the Dalmatian backcross program. In their report to the Board, the committee stated: "Because the introduction of the low uric acid dogs into the AKC registry gives Dalmatian breeders a scientifically sound method of voluntarily reducing the incidence of the condition, this committee strongly recommends some controlled program of acceptance of these dogs. Where the strict health and welfare of the breed is the overriding concern, no other argument can be made." Do you believe scientists and veterinarians on this committees are qualified to make recommendations on this issue?

Yes, we believe the scientists and veterinarians on this committee are qualified to make such a recommendation

- a. if they are provided with adequate and accurate information
- b. and if there had been an opportunity for them to also hear the concerns of other Dalmatian breeders and the Parent Club.
- c. Even if the Committee had adequate and unbiased information, their mission is to evaluate health and welfare issues. Registration policy decisions are the responsibility of the AKC Board of Directors.

There are many long-time and experienced breeders who express doubt about how frequently stone formation occurs in the general population of purebred Dalmatians and whether there is a need for such a drastic move as to introduce a whole new gene pool into the purebred Dalmatian. These breeders successfully manage their Dalmatians by

- a. feeding an appropriate diet which is low in purines
- b. adding water to their dogs' food to encourage hydration and by encouraging their dogs to drink large amounts of water
- c. giving them access to the outdoors where they can urinate as often as needed
- d. careful observation of their dogs

Both Dr. Bartges and Dr. Hughes suggested that increased water intake is protective against stone formation.

We believe that the members on the AKC's Health and Welfare Advisory Committee were given incomplete and biased information. Please read the answer to question #2.

2. There is considerable disagreement among members of the Dalmatian fancy with respect to the incidence of stone formation in the breed and therefore just how much of a concern stone disease should be for Dalmatian breeders. Some indicators of the significance of the problem are: Most pet insurance companies exclude coverage of urate stone disease in Dalmatians and DCA has spent more money on educational efforts and research for urate stones than on any

other health problem. Studies done at urolith laboratories at the University of Minnesota, UC Davis and the University of Guelph in Canada have shown that Dalmatians are significantly more likely to develop urates stones than any other breed. Various researchers reported, in peer reviewed scientific journals, that between 13.8% and 34.3% of male Dals, in their studies, had stones. How do you propose answering the question of whether or not urate stone disease is a significant problem in the breed?

We agree that there is “considerable disagreement among members of the Dalmatian fancy with respect to the incidence of stone formation in the breed”. The following are some things to consider regarding the evidence given in question #2.

- a. We are aware of pet insurance companies that do not cover inherited diseases in general. VPI pet insurance has the following exclusions for Dalmatians on its website: Petinsurance .com: “Abnormal uric acid metabolism resulting in urate urolithiasis; Bronzing syndrome; Deafness; Hereditary laryngeal paralysis; Hereditary nephritis (familial renal disease); Hereditary storage abnormality (ceroid lipofuscinosis); Leukodystrophy; Muscular cramping; Pannus (superficial keratitis); Scotty cramp”. Deducing the significance of a disease in our breed from insurance company exclusions would lead us to some very inaccurate assumptions about the frequency of these conditions.
- b. It is not valid to say that because DCAF has funded urate stone research it is a very significant problem in the breed. It is just as likely that the funding is a result of the furor that has ensued among the Dalmatian fancy since the initial registration attempt of the backcross dogs. The funding of research is an attempt to try to scientifically investigate the significance of the urate stone issue in purebred Dalmatians.
- c. The AKC Canine Health and Welfare Advisory Committee was provided with a frequency of stones from 13.8% to 34.3% in the general population. The 34.3% number came from a published study by Dr. Danika Bannasch which consisted of a self-reporting survey that consisted of a 179 Dalmatians. That is way too small a sample. The 13.8% comes from review of 565 patients of the Veterinary Medical Teaching Hospital, University of California-Davis that is part of the same publication. (Inheritance of Urinary Calculi in the Dalmatian, D. L. Bannasch, et.al., J Vet Intern Med 2004; 18:483-487) Therefore, the Advisory Committee used only information from one researcher.

In a letter dated July 22, 2010, on University of California- Davis letterhead, Dr. Bannasch writes: “The survey was a tool to obtain pedigree data from dogs with known affected and unaffected status in order to perform the heritability analysis. The reported prevalence was for dogs ‘in the survey’ as stated very clearly in the abstract of the paper; at no time was the population of dogs surveyed intended to be or represented as a probabilistic sample of the owned population of Dalmatians in the United States.” It is unfortunate that the AKC Health and Welfare Advisory Committee was provided with these statistics which even Dr. Bannasch states are not representative of the total population.

- d. All the stone studies show that Dalmatians are more likely to form urate stones than any other type of stone. However, there are no studies that accurately determine the prevalence of stone formation in the general population. The studies are either of veterinary clinics and university hospitals reporting the incidence of stone formers in their patients. This is a biased

population and results in over-reporting. The Minnesota Urolith Laboratory report quantifies the types of stones analyzed. Quoting from that publication: "Although the formation of uroliths in Dalmatians appears to be associated with a genetic trait, the hyperuricuria associated with defective purine metabolism is a predisposing factor rather than a sole cause of urate urolith formation." (Evaluation of the association between sex and risk of forming urate uroliths in Dalmatians, JAVMA, Vol 227, No.4, August 15, 2005. p. 565).

- e. Dr. Susan Hughes, in 2005 and 2006, ultrasounded 377 Dalmatians. At that time only one of the 377 dogs had a 3mm stone that might have resulted in blockage. That is less than 0.3% of the dogs ultrasounded. If the incidence of stones was even 1%, there should have been 3 or 4 dogs with stones. If the incidence was 34.3% as cited in the AKC Canine Health & Welfare Advisory Committee recommendation, Dr. Hughes should have found 129 dogs with stones.
  - f. It is obvious that to date we do not know the true prevalence of stone formation in the purebred Dalmatian. If it was possible 7 years later to again ultrasound the 377 dogs in Dr. Hughes study, we would gain extremely valuable information regarding how many of the dogs with urinary sediment actually went on to form stones.
  - g. Data from other countries does not support the claim that between 13.8% and 34.3% of purebred Dalmatians form stones. Data from the United Kingdom, Norway and the Netherlands suggest a much lower incidence averaging closer to 2% in their survey populations.
3. Some people believe that male Dalmatians can be managed so that urate stones do not become a problem. Veterinary and scientific literature as well as anecdotal evidence from veterinarians, indicate that the typical owner of a male Dalmatian is not effective in preventing their dogs from needing medical treatment for urate stones. Can you describe the evidence or data that supports a different conclusion?

A brief search by Kelly Flannigan, D.V.M., for veterinary and scientific literature supporting the concept that it is difficult for owners to keep their dogs well hydrated and adequately exercised did not yield any results. If such literature exists, it should be made available to the membership.

Anecdotal evidence should be defined before anyone is misled to believe it is a significant source of true value.

From Wikipedia: "The expression **anecdotal evidence** refers both to evidence that is factually unreliable, as well as evidence that may be true but cherry-picked or otherwise unrepresentative of typical cases.....In both cases the conclusion is unreliable."

Please see the full Wikipedia entry for more information about "anecdotal evidence".

As for producing evidence or data that proves that it is easy to keep dogs well hydrated and adequately exercised, standard research journals typically do not publish that kind of work. However, long experience with Dalmatian owners and puppy buyers suggests that it is easy to provide the conditions necessary to minimize the formation of clinically significant urate stones.

4. It has been suggested by some people that if uric acid levels are lowered Dalmatians will

form other types of stones that are more difficult to treat than urate stones. Can you provide any evidence to support that theory?

Dr. Joseph Bartges at the University of Tennessee in his letter to then DCA President Eva Berg on April 27, 2006, reported that out of the 483 Dalmatians with stones in his survey, 317 were identified as urate stones. That is 65.6%. The other stones were identified as:

- 27.5% did not know
- 2.9% struvite
- 1.9% calcium oxalate
- 1.7% cystine
- 0.4% (2 stones) xanthine

That means that 6.5% of the identified stones in Dr. Bartges survey were not urate stones. The Minnesota Urolith Center reports that 4.4% of stones they analyzed in the Dalmatian were not urate stones.

Those of us who have high uric acid AKC registered Dalmatians cannot provide the evidence that low uric acid Dalmatians will or will not form other types of stones since our dogs have high uric acid. It is up to the LUA backcross breeders to keep records and to provide the evidence.

Even if the LUA backcross dogs do not form urate stones, there will be a small number forming other types of stones. It would be a terrible oversight if LUA dog owners were lulled into complacency thinking that their dogs could not form stones. They might not form urate stones, but they will still form all of the other types of stones.

Dr. Bartges at the University of Tennessee is currently testing the hypothesis that Dalmatians may possess a genetically determined inhibitor that prevents crystal and stone formation even though there is a high level of urinary uric acid. These inhibitors, if identified, would explain why only a small portion of purebred Dalmatians form stones.

5. In 1973 a single breeding to an AKC Champion Pointer was done to transfer the gene for low uric acid to a line of Dalmatians. The generations that followed were bred only to Dalmatians. Most of the LUA Dalmatians alive today are at least 11 generations away from that one Pointer. Mathematically that makes them 99.6% Dalmatians. Since the AKC was willing to accept descendants of the backcross program as purebred Dalmatians at the 5th generation, what additional criteria would you use to determine if descendants of the backcross project should be recognized as purebred Dalmatians?

Late on Monday, May 2, 2011, the day of the DCA discussion, we received a copy of the report "Molecular Genetic Analysis of Backcross Dalmatians Compared to AKC Dalmatians, UK Dalmatians, Pointers and Other Breeds." The 27 Backcross samples were provided by Denise Powell. The US Dalmatian samples were selected from Mars Veterinary stored samples. Mars Veterinary ran a "first principle component analysis". As would be expected from a first principle analysis, the Pointer, the UK Dalmatians and the combined AKC Dalmatians and Backcross dogs formed 3 distinct clusters. Both Pointers and Dalmatians have maintained closed stud books for many years. The UK Dalmatians have been an isolated population on the islands because of the strict rabies quarantines and therefore either genetic drift or selection pressures have led to a different gene pool. The Backcross dogs have been bred back to AKC registered Dalmatians and we would expect them to be more closely related to AKC Dalmatians

than to UK Dalmatians or the Pointer. In other words, this report did not provide any unexpected information.

What is interesting in this report is that in Figures 6 and 7, the AKC US Dalmatians and the Backcross dogs do not completely overlap. The report states that “the backcross and US Dalmatians separated by the second principle component.” From the data provided, no one can say what the difference is between the Backcross dogs and the purebred AKC Dalmatian, but there is some difference. The report states: “Further analysis may be able to reveal additional insights in the analysis of the Backcross data set, including individual chromosome analysis reporting, but these comparisons have not been possible to date given the limited timescale available to perform this report in time for the meeting for which it is intended.”

It is no surprise that a study of genetic markers would find that the LUA breeding program is closely related to the AKC registered Dalmatians – they have been breeding AKC dogs into the line since 1973. These markers in no way identify recessive traits that could be expressed when the homozygous LUA dogs are bred to each other. Only test breedings will illuminate the best and worst traits of the line.

6. The AKC will register foreign born Dalmatians based on a three generation pedigree. The AKC has an outreach program which researches pedigrees of dogs that do not have AKC paperwork to determine if the dog comes from AKC registrable stock. A dog can qualify for AKC registration if the pedigree shows no break in AKC lineage and the dogs in the pedigree originate from AKC registrable stock. This is done on the basis of documentation provided by the breeder or owner such as pedigrees, contracts or bills of sale. DCA has not objected to registration of any of those Dalmatians. Health testing has never been required for any dog to be registered with the AKC. Yet the DCA Board continues to insist that more testing and data is needed before registration for LUA Dals can even be considered. Why should LUA Dalmatians be held to completely different requirements for registration than any other Dalmatians, including those that are come in from other countries and those that come from some of the less than reputable alternate registries that exist in this country?

Because the LUA Dalmatians would be registered specifically with the intention of providing a health benefit, it would seem reasonable to first prove that such a benefit exists. At this time there is no accurate estimate of how many Dalmatians form large enough urate stones to cause blockage and a medical emergency.

Dalmatians imported from countries on AKC's accepted registry list are eligible for AKC registration if they present a certified export certificate and a complete three-generation pedigree. Foreign registries that are acceptable to AKC adhere to certain AKC registration requirements. Naturally, AKC reserves the right to modify its acceptance of a foreign-bred dog if the registration policies of a previously approved registry change.

AKC's outreach program is a pedigree research service that enables customers to prove that their dogs meet AKC registration policies. Only dogs that originate from AKC registrable stock that can demonstrate complete pedigrees and show no break in their AKC lineage are eligible for registration. The descendants of the Dalmatian-Pointer cross that seek registration as Dalmatians do not qualify for this program because of the break in their lineage.

Backcross proponents make the case for registering the descendants of the Dalmatian-

Pointer cross on the basis of health related issues. Specifically they assert (1) that the high levels of uric acid excreted by Dalmatians in their urine cause or are the primary cause of urate stones in Dalmatians, (2) that the incidence of urate stone formation in Dalmatians is so high and the symptoms so severe that the condition justifies crossing breeds in order to correct it and (3) that the descendants of the Dalmatian-Pointer cross warrant registration because the gene transfer accomplished by the cross was successful and the descendants will not form urate stones.

Given the many health claims, counter claims and concerns of DCA members, it is not only reasonable, but also right that the DCA, whose purpose it is to protect the Dalmatian breed, would want to review all health-related information and evidence available before supporting registration. In addition, the DCA has an obligation to uphold the vote of its membership, which has repeatedly considered the question and persistently opposed registration. In light of the lack of information about the backcross descendants, it is not possible to do a valid risk-benefit assessment. This lack of information remains a significant hindrance to progress.

AKC has not been faced with a registration request of this nature before. In the past when AKC has been asked to alter its registration policies for a single breed, that request has always come from a parent club. In this case the request reached the AKC Board of Directors via a petition put forward by a minority faction of a parent club whose membership had already voted against the request.

In a perfect world, the 1973 Dalmatian-Pointer cross would have been accompanied by a well-designed experiment endorsed by the parent club. It is regrettable that recognized and commonly accepted research protocols were never established for this experiment. A good experimental design articulating the hypotheses, goals, testing methods, data collection, record keeping requirements and outcome analysis might have led to a different outcome.

In the absence of standard research protocols, and/or until AKC adopts specific policies for dealing with open gene pools, accepting these dogs would set a dangerous precedent.

7. Many people focus on the fact that not every LUA Dalmatian meets the ideal for a show quality Dalmatian and miss the fact that only a small percentage of the general population of Dalmatians have what it takes to be successful in the show ring. Show dogs result from intense efforts of those who show in conformation and who breed for pups that can be competitive. If you object to AKC registration of LUA Dalmatians based on perceived lack of show quality, do you also support withholding AKC registration for all pet quality puppies? If so, who should decide which pups in a litter are show quality?

If you read the 10 questions presented by the group which at this time is opposing registration of the Backcross dogs, you will find that not a single question addresses the show quality issue. Our hesitancy at this time is based on the following:

- a. How prevalent is stone formation in the purebred Dalmatian population? There are no studies that we are aware of that do not have a selection bias. All studies are either self-reporting surveys or veterinary clinic and veterinary teaching hospital data. These types of studies will always over-estimate the affected individuals. Does the breed have a significant enough problem to warrant opening the stud book? We do not have an answer.

- b. There is a lack of adequate records regarding any health issues that might have been introduced from the Pointer. The American Pointer club surveys its breeders every 5 years with the last survey being in 2007. We are concerned about changes in frequency of some characteristics that have multifactorial inheritance which at this time we do not understand.
- (1) Epilepsy is listed in a 2007 Pointer breeder survey as being the 2<sup>nd</sup> most significant concern by Pointer breeders. Dalmatians have some epilepsy issues as well. What is the status of epilepsy in both the LUA and HUA backcross dogs?
  - (2) OFA records show that 8.1% of Pointers are dysplastic while 4.6% of Dalmatians are dysplastic. How many of the LUA and HUA backcross dogs have had their hips OFA'd? How many are dysplastic?
  - (3) When Dr. Schaible first asked for registration of the Pointer/Dalmatian backcross get, his hypothesis was that the high uric acid was contributing to dermatitis and urinary calculi. In the 1970's Dalmatian coats were horrible. Today the coats of AKC Dalmatians are remarkably improved. The 2007 Pointer survey still lists skin disorders and contact dermatitis as 3<sup>rd</sup> and 4<sup>th</sup> problems.
  - (4) The Pointer is predominantly a white-coated breed and deafness is known to be more prevalent in white animals including dogs and cats. The American Pointer Club does not require BAER testing for a CHIC number. What type of records have been kept for both the LUA and HUA Backcross dogs for deafness?

Once recessive genes for multifactorial genetic inheritance are introduced into a population, they are almost impossible to remove from the gene pool. Deafness, hip dysplasia, epilepsy and allergies have inherited tendencies for which we do not understand the genetic mechanism.

8. Some people are concerned that, as time goes, it will become difficult to tell by looking at pedigree, if a Dalmatian is a descendant of the backcross project. That problem could be avoided if AKC registration numbers for descendants the backcross project contained a special character to make it easy to spot them in a pedigree. Would the addition of a special identifier for these Dalmatians make a difference in how you vote on the question of AKC registration for descendants of the backcross project?

If AKC chooses to register the backcross dogs, we would hope that they would add a special identifier. However, it would not make a difference in how we personally would vote.

9. Some Dalmatian breeders have candidly expressed that their objection to AKC registration is based on concerns that registration of LUA Dalmatians will negatively affect their ability to sell pups from HUA litters. What many people do not realize is that most of today's LUA Dalmatians carry the gene for HUA, which means that they can produce HUA pups when bred to other Dals with the gene for HUA. The experience of those who are breeding from LUA Dals is that most puppy buyers simply want a puppy that appeals to them and to get it from a breeder they feel they can trust. Does the fact that LUA Dalmatian breeders will continue to have HUA pups in their litters and that they have had no problem placing HUA pups change your views about AKC registration for descendants of the backcross project?

If the stated purpose of the LUA breeders is to rid the Dalmatian

breed of the mutant gene which results in the production of high uric acid, why do the LUA breeders continue to produce high uric acid dogs? Why not use only homozygous UU dogs in your breeding programs? That way all of the dogs produced would have low uric acid levels.

We are also concerned that puppy buyers might be allowed to believe that because their dogs are LUA they will not form any type of stone even though we would expect them to form the non-urate stones at the same rate as all HUA Dalmatians. Headlines such as “Guaranteed Stone-Free Dalmatians? YES!” are at least misleading if not an outright misrepresentation. (Canine News You Can Use. 4 June 2010, Belvoir Media Group, LLC – misspelling of Dalmatian is in the article headline) The LUA breeders need to be extremely vigilant about what claims they make.

10. The AKC Health and Welfare Committee and other experts have recommended that LUA Dalmatians be carefully incorporated into the general population of Dalmatians. Doing this will require involvement of many knowledgeable breeders. There are a significant number of experienced and reputable Dalmatian breeders, in the US and other countries, who have indicated they would like to include LUA Dalmatians in their breeding programs. But they will not do so if they cannot compete with their LUA Dals in the venues they currently enjoy. AKC registration is the key to rapid improvement in the quality of LUA Dalmatians, because it is going to take participation of a diverse group of experienced breeders who know how to produce Dalmatians with proper breed type, good health and temperament. Since there is no obligation for any breeder to incorporate LUA Dals in their breeding program why do you believe DCA should stand in the way of those who would like to work toward this goal within the AKC?

The stated purpose of registering the backcross dogs in the Health and Welfare Committee recommendation is for “the strict health and welfare of the breed” and does not refer to the pro-registration group’s question #10 assertion that “AKC registration is the key to rapid improvement in the quality of LUA Dalmatians, because it is going to take participation of a diverse group of experienced breeders who know how to produce Dalmatians with proper breed type, good health and temperament.” If the purpose of registering the Backcross dogs is to eliminate the uu gene, then breeding to AKC uu dogs defeats the purpose of the Pointer-Dalmatian backcross experiment. Continued use of high uric acid purebred Dalmatians (uu genotype) in breeding programs will not lead to a decrease of high uric acid producers in the general population.

DCA is planning to have a vote of its membership regarding the registration of the Backcross dogs. If there is a “significant number of experienced and reputable Dalmatian breeders.....who...would like to include LUA Dalmatians in their breeding programs” they will have the opportunity to vote in favor of the registration. The DCA Board’s intent is to run a democratic organization that is responsive to the wishes of the membership. In the previous votes, the majority of members voted not to recommend the registration of the Backcross dogs.